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Original Contributions.

IS IT A BLOT ON THE PROFESSION?

By William H. Trueman, D.D.S., Philadelphia, Pa.

There is, in the leading paper of the December number of the Digest, one point that to my mind especially invites criticism. It is this; and it is a fault common, far too common in our profession; the gross, if not inexcusable carelessness in the use of assumed facts upon which to base disparaging remarks regarding a professional brother. The writer makes a grave accusation upon either the intelligence or the integrity of men of good repute and of recognized skill, based upon the bare statements of patients who were formerly under their care. What evidence had he that those statements were true? What evidence that they were not, unintentionally perhaps, misleading? So far as the article shows, he made no efforts and exercised no care to verify the statements made, but at once pronounced judgement that the three operators, whose acknowledged professional attainments—if a well earned professional reputation is worth anything—fully entitled them to an hearing, were guilty of either ignorance or indifference regarding a most important operation.

What are the bald statements of patients, especially concerning a dentist who they have discarded, worth? Would the doctor accept as readily the statement from one of his patients, especially if coming from another dentist, that the beautiful gold filling he inserted a few days ago came out the next day? There is the vacant cavity to which the patient triumphantly points, and insists that it is in the tooth upon which he operated. Would he not want to take a careful look at that tooth? In case of doubt would he not want to examine his diagram account book before accepting his patient's dicta? Why do dentists so generally use diagram

account books? Is it not one of their implied functions to meet and furnish evidence to refute the so often made mis-statements of patients? In the statements upon which the article is based we readily recognize the mere talk of everyday office experience, that for the most part should go in at one ear and immediately out of the other.

Am I alone in having patients of unimpeachable veracity who solemnly declare that they faithfully use tooth-powder and brush, as directed, three times a day, and yet present themselves with teeth showing deplorable and continued neglect? Are my patients the only ones who break teeth from plates while eating something very soft? Do other dentists have patients bring to them strong metallic plates badly bent out of shape by, if their statements are true, ordinary use in the mouth? I have a few of that kind, and any dentist who will take the trouble to do that which so many dentists shamefully neglect—make himself familiar with the literature of his profession,—will soon discover that such patients have always existed and have pestered many a professional brother.

There are careless dentists, too many of them, there is no question about that; careless in more things than not properly cleaning their patients' teeth; but I am not willing to admit, indeed I indignantly repel the insinuation that this special carelessness exists to a degree entitling it "a blot on the profession." If the Doctor would investigate a few of the cases like the three he cites, he might, perhaps, be less ready to accept as evidence against others that which he would energetically repel if directed to himself. I have followed up quite a number of such cases with the result of feeling proud to be in a profession embracing within its membership so large a majority of honest, careful, well qualified men. So utterly worthless and so often so, in my experience, has such evidence as that upon which the Doctor predicates his case proven upon investigation, that I read with impatience reflections upon individuals, and from them to the profession at large, its text-books and schools, based upon such flimsy and unreliable testimony. Let the Golden Rule have fair play.

Please name the text-books, giving author and date, that teach it is not a serious matter to neglect the removal of tartar deposits and the proper cleansing of the teeth. I have a few hundred

treating on that subject, and from Bourdet to Craven, so far as I now recall, they all especially emphasize the importance of thorough and constant cleanliness. Please remember, however, that the theories upon which the later methods of procedure are based are as yet in their infancy, indeed very young. The statement so often made, that more teeth are lost from neglect to remove tartar deposits etc., than are destroyed by caries, is open to question. Time sufficient has not yet elapsed to prove that modern methods have fully mastered those conditions so prolific of tooth-loss, which the older writers so well named, "Devastation of the Teeth."

METHOD OF MAKING COMBINATION BRIDGE-WORK.

By F. J. Fesler, D.D. S., Lowell, Mass.

During the last few months persons have been visiting the dental offices throughout the country and selling ideas respecting a combination bridge, consisting of a small rubber plate, to which gold clasps are attached.

I will explain the method of making the fixture and save you the sum charged by the agent, $25.00, so that you will feel that you have the method and Digest for one year's subscription, $2.00, making a saving of $23.00 from one article.

The method is mostly applicable for spaces where superior or inferior cuspids or molars have been extracted. Particularly is this true if the wisdom tooth or twelfth year molar be in place, the molar and bicuspids anterior to it having been removed. Or in cases where the second bicuspid remains standing alone, and the wisdom tooth on the same side is still in place, the other molars and bicuspid having been removed, as well as many other cases which will readily suggest themselves to the mind of the ingenious operator.

For example, we will select a case that often presents itself, one where the twelfth and sixth year molars and second bicuspid have been removed from the lower jaw. First take an impression in modeling compound, wax, or other material, and make a model in plaster, then take the measure of the molar and bicuspid around which you are to form a clasp, first making a pattern from common tea-lead by which to cut the clasp metal.

This should be made from the following formula:—Take a five dollar gold piece and a ten cent silver piece, or what is better, a ten dollar gold piece and two ten cent silver pieces, melt them together and roll into plate, No. 14 thick, U. S. standard gauge. This can best be done by sending the same to a gold refiner, as the expense is small and better results are obtained than can possibly be the case with the ordinary conveniences found in most dental offices.

From clasp metal obtained in this way cut your clasp by the tea-lead pattern, made either from the plaster model or by direct approximation in the mouth, to go two-thirds of the entire distance around the teeth to be fitted. Fit this clasp as accurately as possible, and in most cases it will slip onto the tooth tightly enough, then remove it and solder a lug, or perforated piece of plate, to extend over into the rubber to which the teeth will be attached.

To prevent its being in the way of the teeth you should be careful to see where it is best to solder the lug, or, as some prefer, two holes may be drilled through the clasp and a piece of gold wire, about No. 20, made in the form of a staple, can be soldered into the clasp, making a strong attachment around which to pack the rubber.

After this is done, the clasps being made and fitted to the molar and bicuspid, take them off, warm them and place some common wax or paraffine on the inside, and while warm replace them on the teeth. This helps to hold them in place and keeps the impression material from going between them and the teeth.

Now take an impression in plaster of paris of that side of the mouth, and when the impression is withdrawn the clasps will come out with it, or if not can readily be readjusted into it. Then make a model from this impression, and when done form a plate of wax the size and shape of the one you wish in rubber. (It is well to carve out space for teeth to be afterwards attached.) Flask in the same way as in making rubber plate, scald out wax, pack rubber in its place and vulcanize. When done, finish it up and try in the mouth to see if the work is perfect in adaptation, and if so, select your teeth, (I find the hollow back teeth to be more easily adjusted), fit them into place and try the bite. When correct proceed in the same manner as though you were repairing

a common rubber plate when attaching a tooth or two. When completed it makes a very neat, cheap bridge, if too much lateral pressure is not brought to bear on it, in which case it will spring the clasps to the side opposite the pressure and allow the plate to gall the soft tissues.

WHAT IS THE MOST SATISFACTORY ANTISEPTIC, AND BEST METHOD OF ROOT-CANAL STERILIZATION?

BY DR. C. C. BARKER, MERIDEN, CONN., READ BEFORE THE CONNECTICUT STATE DENTAL ASSOCIATION, MAY, 1895.

This is the third one of the four questions propounded by the American Dental Association to the state and local societies throughout our country. These questions come to us from their regularly appointed committee—Louis Jack, J. N. Crouse, and Edward C. Kirk, Chairman, with the request that we discuss them and present a report before the next annual meeting of the A. D. A.

The advantage and benefit to be derived from such a general discussion of the topics indicated must be apparent to all. If a consensus of opinion can be obtained, it can be gained only by some such method as this. I feel that our thanks are due the National Association and their Committee for initiating the scheme.

The question which is now before us presses for answer, not only now, but often in the routine of daily practice. The dental pulp is a very unneighborly, unsocial part of our anatomy. He often gives infinite trouble while alive, and seldom forgets to kick after he is dead. As long as he lives and behaves well we will not taunt him with uncanny names, but when he is dead, he becomes a thing of evil—"*d'evil*"—a veritable devil.

Every dentist in Connecticut, at least, would like to know an absolute, a sure and certain means or method by which to put a quietus upon his Satanic majesty and undo his deviltry.

I do not quite like the form of the question, or questions, as I may call it, for, if you will notice, it is a sort of double question—"What is the most satisfactory antiseptic, and best method of root-canal sterilization?" Inasmuch as "the best method of root-canal sterilization" involves antiseptic treatment, the first question, "What is the most satisfactory antiseptic," is really superfluous

and out of place; it cannot be properly considered—for obvious reasons—except as we give attention to methods of treatment.

Why is this particular question pressed at this particular time? Because there is a general disposition for some short cut, quick, rapid transit method, when called upon to deal with teeth having dead or dying pulps. In evidence, note the proposal to leave the devitalized tissue undisturbed, treating it somehow, some way, antiseptically, as advocated by Herbst and others. Even Dr. Miller joins the endeavor to carry out the plan. We stand with half a century of study of the pulp, its nature, its functions, pathological conditions, etc., to our credit and advantage, and it is time we began to know something definite, and I think we do.

Whence the necessity for sterilization? We all know that apical pericementitis, alveolar abscess, and their accompanying disorders, have as their invariable and immediate cause the septic root-canal condition produced by a disorganized, putrefying pulp. We also know the accepted and often quoted axiom, that effects disappear when causes are removed. (This is not absolutely true to the end of the chapter, but is correct within a certain limit.) With these two points, then, fixed and assured in our minds, concerning which there can be no difference of opinion:—1. That the putrefying pulp is the prime cause of the troubles referred to, and their incident woes, and 2. That if the cause can be obliterated a cure is likely to be the sequel—common sense points infallibly to the initial step which should at once be taken in a right "method for root-canal sterilization." The first step is to as carefully and as thorcughly as possible eliminate from the tooth structure the disorganized and putrefying pulp. This means a cleaning of the premises.

How can it be done most effectually? Before answering this directly let me say that teeth come to us for treatment in a great variety of conditions, and are brought by many varying people—men, women and children, in all grades and states of vital power and constitution, normal and abnormal. Another thing to be thought of about these people who come to us is, that in them all the vital power, the power of life within them, is struggling more or less successfully against the invasion of the tissues being made or attempted by way of the root-canal. What we should do is to assist this effort of nature to cast the devil out.

How can we do it? By roughly and rudely plunging probe and broach into the foul mass, filling the canals and mingling with its infectious poison some questionable medicament we call antiseptic? I say no! Clean the premises; wash out the foulness; float it off; carry it away with a flood. This I believe is the proper thing to do—the first thing—not simply first in point of process, but the chief thing, the most important step; for if this is not well taken, subsequent steps are liable to end in failure.

Unless the tooth which claims our attention is very sore—so much so that handling will aggravate its condition, the sooner we go about the cleaning the better. In the case of this sore tooth a quick relief, followed by a speedy improvement of condition, can usually be afforded by making gentle entrance into the pulp-canal, just sufficient to give escape to the pent-up gases. A day or so later, when soreness has abated, we may proceed to cleanse the canal or canals, as the case may be.

We are often told that entrance to a canal ought never to be made without the rubber dam *in situ*. When we are to open a hitherto unexposed canal, where the pulp has lost its life by strangulation, a blow, wedging, or something of the sort, the dam should be used without doubt; but when the pulp has died from exposure, and the secretions of the mouth have had free access, I cannot conceive the necessity of applying the dam at once. I prefer usually in such cases to first cut away the decayed dentine from the crown cavity, opening up a clear path to the canal entrance, and then, without the dam, I can use water more freely in syringing out. This washing almost invariably accomplishes a good deal; a large proportion of the canal foulness is generally evacuated by it, making further cleansing easier. Now apply the dam, and with a proper breach and cleaner remove remnants of pulp tissue, taking care that nothing is forced through the apical foramen, then saturate the canals and dental tubuli with a 50 per cent. solution of peroxid of sodium, washing and rewashing with this liquid, by means of a broach wrapped with absorbent cotton, until the apartments are cleansed.

Sometimes, when the tubules of the dentine are in a very foul and discolored state, I send the patient away with packings of cotton or asbestos fibre moistened with sodium peroxid, for a day or more—never with any unsatisfactory results—then at

another sitting complete the washing, and if access to any canal is not as complete as wished for, I supplement the sodium treatment with an application of a 50 per cent. solution of sulphuric acid, which not only neutralizes the free alkali of the sodium, but will creep along the fine, hair-like, tortuous canals, cremating and rendering innocuous the broken down tissues, giving, after a 24 or 48 hours application, entrance into these otherwise inaccessible canals.

With these two agents I believe we have at our command the best means hitherto employed for pulp-canal and tooth tissue cleansing. By them we can render a tooth aseptic—free from septic matter—if with anything. Often the tooth may be cleansed and canals filled at one sitting, if conditions are favorable; if not, put a dressing of cotton saturated with alcohol in the canals, close the entrance securely with gutta-percha, and put it on probation. This will give nature time to adjust matters in the region beyond the foramen, and she will apply her kindly energies to this purpose. Remember, she makes the cure, not we. All we can do is to chase away the intruder—remove the cause—and she does the rest, so far as the soft tissues are concerned. How patient she is, yet how often abused. How tolerant she is of poor dentistry. We are indebted to nature more than we know. She struggles for recuperation continually until exhausted. Let us trust her more and see that she has free and unfettered opportunity for her work. This should be our function and this should indicate what use we make of the materia medica.

There has been, and probably is now, much ill advised overmedication of the teeth. It was this fact without doubt which prompted Dr. Junius E. Cravens, of Indianapolis, to present at Washington, in 1887, his paper on the "Management of Pulpless Teeth," in which he advocated simply a mechanical cleansing of pulp-canals without *any medication whatever*, and then filling, taking care that the apex of the root is perfectly closed. He advised us to "throw physic to the dogs." How fiercely he was taken to task by a number of men whom I might mention. From the spirit in which they did it I felt like taking his part, although I considered his paper very incomplete and largely incorrect. Still, it had this merit of insisting upon a cleansing, and meanwhile keeping medicaments away from the canal.

So eminent an authority as Dr. Miller, who knows all about the heathen microbes and can bring the antiseptic batteries to bear, says the chief point in pulp-canal treatment is a thorough mechanical cleansing. How can this cleansing be achieved more readily and perfectly than by the method and the agents I have mentioned? When this has been done, and nature smiles at the operation, if perchance there be fear that somewhere in some capillary extremity or recess the devil still lurks, send some chlorid of zinc in after him. The chlorid will certainly permeate to his hiding-place and paralyze his every energy.

It is largely for this reason that I favor oxychlorid as a root-filling. I do not wish, either, to employ antiseptics which stain the tooth substance.

There is no occasion for so much fright concerning the bacteria. Micro-organisms can not "live and thrive and grow" except upon suitable soil—a habitat. This, within the tooth, is the dead pulp. When that is fully removed their occupation—like Othello's—is gone too. Pericementitis and alveolar abscess are caused, as I understand, not directly by the microbes, but rather by the poisonous ptomaine resulting from the putrefaction of the pulp, which, passing through the apical foramen, excites inflammatory action. With this thorough cleansing and purifying the ptomaine supply is cut off, distillation ceases, and with the apartments renovated, everything sweet and clean, what is needed is not a shotgun prescription to kill something, but a mild and peaceable tenant who shall thoroughly occupy the premises and keep the mischief-makers out.

I do not favor the idea held so largely in many quarters that every tooth should be saved and that every root may wear a crown. The sentiment is quite absurd. It is neither according to law nor gospel. The best antiseptic for a large class of derelicts, whose condition I will not stop now to describe, is not carbolic acid, or even mercuric chlorid, but a well adapted pair of forceps skillfully applied.

GRATIFYING TO SMOKERS.—Professor Hajak, of Vienna, says smokers are less liable to diptheria and other throat diseases than non-smokers in the ratio of one to twenty-eight. Dr. Schiff tells us that smoking is forbidden in bacteriological laboratories because it hinders the development of the bacteria.—*Medical Record.*

Digests.

The Therapeutic Gazette for January, 1896.

"THE CONTROL OF HEMORRHAGE IN 'BLEEDERS.'" It is hard to imagine a more shocking discovery for the surgeon than the fact that he has operated upon a "bleeder." The ordinary methods of controlling hemorrhage are of so little avail in these cases as to be practically capable of producing more harm than good, and a minor surgical operation, from which the patient expected to recover in a few hours, may for this reason cost him his life.

There are two methods which should be tried, as they rest upon a rational basis and have some practical experience to endorse them. One of these is, covering the involved surface with lint which has been wrung out of a strong solution of alum, or where the bleeding is from an extremity, to immerse the part in a saturated solution of this drug.

The second and perhaps more promising method is the internal use of calcium chloride for its influence upon coagulation of the blood. Wright, of England, has proved that it increases the coagulability of the blood, not only in animals, but also in man, and has reported several cases of hereditary hemophilics where good results followed its use.

"ON THE INFLUENCE OF ETHER UPON THE KIDNEYS." Feuter, of Berne, has reported conclusions based on one hundred and fifty clinical cases and thirteen experimental observations in animals on ether narcosis. These were: 1. That ether has no perceptible effect upon the healthy kidneys of animals, who, moreover, are more susceptible than mankind to its influences. 2. That it is not dangerous in persons whose kidneys are slightly diseased. 3. That subsequent disturbances in the circulation of the kidneys, when met with, are very transitory and quickly disappear.

Wunderlich, in a very admirable *resume* of the subject, con-

cludes that in an already existing case albuminuria is frequently augmented by ether narcosis; that this is twice as common in chloroform narcosis—in the proportion of 11.5 to 6.9 per cent. From chloroform, and much less often from ether, casts are to be found—in the proportion of 34.8 to 24.6 per cent. If cylindruria previously exists, from both ether and chloroform narcosis there is an increase to be met with, due, he believes, to an ischemia of the kidney or to a lessened blood-pressure. Casts, he thinks, are due to a direct irritation of the kidney epithelium from the action of the ether or chloroform. He adds, finally, that ether nephritis may be excluded from surgery.

In respect to the renal irritation, Wood asserts that in fifteen animals whose urine was carefully and by various processes tested as to the presence of ether, none was recognized. Yet he admits that etherization in dogs produced cloudy swelling of the epithelium—which, however, he supposes to be due to the general intense congestion by some of the retrograde ether products and not to the ether itself. His conclusions are, that if the kidneys be healthy, the action of ether on them does not amount to much; but if they are diseased, the tendency exists to increased irritative processes.

Burns has lately concluded that some of the bad effects of ether on the lungs and kidneys are due to the oxidation and formation of aldehyde and other products of decomposition, caused by the exposure of ether to the light and to the possible mixture of air in the ether-bottles; both of which contingencies should be guarded against.

Angelesco has shown, what had previously been taught us by Swain in connection with chloroform, that in ether narcosis the temperature falls from seven-tenths of a degree to a full degree, with the difference that under ether there is a vaso-dilatation of the surface, and under chloroform a vaso-contraction.

As perhaps throwing light upon some of the peculiarities and admitted mishaps that occur in etherization, the fact elucidated by Fayer and by Wright might be mentioned—that coagulation of the blood in the smaller vessels and capillaries is very apt to come on with imperfect oxidation. This pertains strongly to the asphyxia or partial asphyxia that we occasionally meet with in etherization.

"NEW VIEW OF THE TREATMENT OF VOMITING AFTER CHLOROFORM ANESTHESIA." In the *Revue de Chirurgie* for September, M. Lewin relates his experience with the use of vinegar to prevent vomiting in one hundred and seventy-four cases of chloroform anesthesia. In one hundred and twenty-five cases he obtained complete success, no vomiting of any kind having been produced. In forty-nine cases there was vomiting, but it was generally slight and the rejected material was rather viscous. The method should be very carefully carried out, in order to insure good results. It is known that chloroform is eliminated almost exclusively through the lungs, partly as free chloroform and partly as formic acid and chlorine; the chlorine exercises an irritating action on the larynx and trachea, and this is one of the principal causes of the vomiting. When a cloth saturated with vinegar is held over the nostrils the chlorine combines with the acetic acid as fast as it is evolved and forms trichloracetic acid.

It is very dangerous to use pure chloroform, and all medicinal chloroform should contain a certain amount of alcohol, which renders its decomposition during narcosis more difficult. The dehydrating action of the anesthetic influences the endothelium of the blood-vessels and causes coagulation of the blood, to which the slackening of the circulatory movement and the feeble activity of the chemico-biological phenomena in the capillaries also contribute. Hence the wisdom of having the patient breathe air heavily laden with moisture, after the action of the chloroform is suspended. Under such circumstances acetic acid is recommended by the author as a powerful factor in restoring to the blood its normal fluidity, owing to a property that it derives from the water it contains, and to its energetic power of destroying the fibrin. Moreover, acids in general are stimulants of the respiratory tract. The foregoing considerations seem sufficient to explain the phenomena, without bringing forward a hypothetical action of the vinegar, or of acids in general, on the vomiting centre, by the intervention of the vaso-motor nerves.

The following observations were made in cases where this treatment was employed. Immediately after the application of the vinegar the pulse became strong, respiration grew deeper, the face regained a little color, and the corneal conjunctiva became bright. The appetite returned at the end of a short time, and the

patients occasionally complained of hunger on the very day of the operation; frequently they did not suffer at all from the general uneasiness which nearly always follows chloroform anesthesia. It does not follow from this, says M. Lewin, that the application of the vinegar always suppresses the vomiting, for, in certain cases where the patients are very nervous, or are suffering from affections of the lungs or of the stomach, vomiting may occur in spite of the treatment.

The method of application is as follows: A piece of linen of about the size of a napkin is saturated with vinegar and lightly wrung out; it is then placed on the patient's face, over the mask, which is afterward carefully withdrawn—care being taken not to allow the air to gain access to the face too suddenly, for it ought to pass through the linen cloth before being inhaled. This cloth must be kept on as long as possible—three hours at least, and better still during the entire day, for occasionally the presence of chloroform in the expired air has been observed for more than two days after the narcosis. If the cloth is removed too soon, nausea will set in; if it dries very rapidly, it must then be replaced immediately with a fresh one, which is put over the first cloth before the latter is drawn away, in order to prevent the air from touching the face. If the wet cloth is annoying to the patient, it may be held away from the face with a mask. It is of the greatest importance to conform to these rules, for failure to observe them has prevented good results from following the application of the vinegar. In administering chloroform it is preferable to use small doses, which is the only rational method, for the mask should not be raised during chloroformization, whereas by the method of large doses it is often necessary to lift the mask after having produced a profound narcosis, and in this way the air reaches the patient's face too suddenly and causes nausea and vomiting, sometimes during the operation, sometimes after it.

Pacific Stomatological Gazette for February, 1896.

"SYPHILIS OF THE MOUTH," by G. MacGowan, M. D., Los Angeles, Cal., read before So. Calif. Odont. Society, October, 1895, (continued from page 91.) You have often heard of gummatous tumors and the fearful deformities caused by their ulceration. By a gumma is meant a circumscribed new growth, due to the influ-

ence of the virus of syphilis, and consisting of small cells, closely packed in the anatomical tissues, and presenting no capability of organization into connective tissue, but tending rapidly, when uninfluenced by treatment, to death, disintegration, and the formation of excavated ulcers. Upon the tongue they may have their primary seat in the mucous membrane or in the muscular tissues. No well-authenticated observation of a syphilide of the mouth pustular from its commencement has ever been made. So we have only these tertiary lesions to consider. All purulent ulcers of the tongue, due to syphilis, and not arising from a gravely irritated mucous patch are preceded by a gummatous nodule, originating within the tissues of the organ. This small tumor softens in its center, and breaking down towards its circumference, gradually enlarges, forming either a deep punched-out ulcer with steep sides and worm-eaten base, covered with a yellowish lardaceous membrane or mass, or a kidney-shaped sore with a livid areola and a sloping base, or covered with the same kind of membrane. Such ulcers are more apt to be one of a group than to be found single; this group forming not unfrequently the serpiginous signet of the Sultan of lues. The deeper its origin the greater the destruction of tissues following the decay of a gumma. But the tongue is a curious organ, seemingly capable to a great extent of regeneration; and however large the sores may have been, their cicatrices are seldom deformative.

The differential diagnosis of this disease from cancer of the tongue is based upon these points of distinction:—*Gumma of the Tongue.* 1. Is the growth of days or weeks. 2. Is a tumor which ulcerates. 3. Purulent discharge abundant and like soft and decayed cheese. 4. Pressure dislodges only caseous masses. 5. Painless or nearly so.—*Cancer of the Tongue.* 1. Is the growth of months or years. 2. Is an ulceration surrounded by a tumor, destroying it yet extending with it. 3. Discharge sanious and filled with gray or black sloughs. 4. Pressure dislodges sebum plugs, not unlike those found in erythematous lupus of the face, from the mucous membrane surrounding. 5. Pain at intervals shooting toward ear—diagnostic.

The ulcer of commencing cancer is generally oval, but may be a simple elongated fissure with a firm base and everted edges. The ulcer extends up to the border of the growth, but the latter

always keeps a little ahead. Its surface is irritable and bleeds easily. When the infiltration of the tissues becomes extensive it is accompanied by marked anemia and sallowness.

When an ulcerated gumma of the tongue is neglected or irritated there is much danger of cancer developing upon it. Unless these ulcerations of late syphilis upon the tongue have been under observation from the time of their first appearance it is difficult sometimes to positively distinguish them from tubercular ulcerations. But a proper attention to the points laid down when speaking of mucous patches of the mouth will generally help to do so.

The simple glandular ulcer, with its red rim, steep sides and soft yellow or gray base, without infiltration, and painful, cannot be confused, by an observant man, with a syphilitic lesion, secondary or tertiary. In the ulcerations of murcurial stomatitis, the blue line on the gums, due to the deposit of the metallic mercury about the necks of the teeth, and the swollen tooth-marked tongue, serve to distinguish it from the loosening of the teeth due to gummata seated about the necks of otherwise sound and painless teeth. It is to the infiltration of the hard and soft palates with tertiary growths and deposits that are due the most startling, disgusting and tedious results of ulcerative syphilis of the mouth. Sometimes the vault of the mouth melts away in a night. Without warning of their presence the gumma situated between the layers of the soft palate or within the hard palate, break down and unite the cavities of nose, mouth and pharynx. The quacking voice and pitiful efforts at swallowing of these victims are familiar to most of you. And, much to the credit of your calling, it is in these cases that the fertile resources of the dental surgeon have shown themselves frequently successful in relief. In two cases coming under my observation, one in my own service and another in that of a friend, I have seen the soft tissues overlying, and the alveolar processes of the upper jaw at the juncture of its two halves, become the seat of an immense and sluggish gummatous thickening, which after a long time became necrosed. This process in my case extended to the hard palate and dome of the mouth.

Before ever regarding the tongue as diseased it is well to remember that the normal appearance of this organ differs greatly as to its roughness, size, color, the length and number of its papillæ, etc.; and that any inflammation of it or its adjacent struc-

tures is apt to exaggerate this greatly. The scaly patches give most difficulty in differential diagnosis to the expert, and to those unused to seeing them are entirely confusing. For this reason I shall not give them consideration. I happen just now to have no well-marked cases of such patches to present to you at this clinic; I have never yet met with such a patch that was infectious. Those dry patches upon the tongue and cheeks, harsh and darker-colored than the normal tissues,found in the mouths of smokers, due to the pipe or cigarette, and appearing upon the side these articles are habitually held upon, need not be mistaken for scaly patches of syphilis.

I will finish my clinic by referring you to this chart marked No. 3, upon which are depicted the various modifications of shape and character observed in the teeth of children born of syphilitic parents. These deformative irregularities of the permanent dentine are usually accompanied by a stunted development of the skin and low vitality of the cornea. The name of Hutchinson's teeth is given to them, after the great English surgeon, Johnathan Hutchinson, to whose researches the primary description of their significance is due.

Stress is placed upon the formation of the central incisors of upper jaw. "The special pathognomonic sign of infantile syphilis is said to be a want of normal width of their cutting edges, so that instead of being broader there than at any other portion, they are narrowed, rounded, and have a peculiar cresentic edge, the surface of which is inclined upward and forward, instead of backward as in normal teeth. Besides, they are apt to be dwarfed in size, to stand apart, and to converge toward each other." These teeth are not excluded from the homes of the rich; but it is in orphan asylums and foundling homes that they are most frequently seen. My personal observation teaches me that the depressing influences of infantile tuberculosis produces a powerful modification upon the permanent dentine, often creating irregularities of the incisors and six-year-old molars, to be with difficulty distinguished from the so-called test teeth. So I have come to place greater value upon the change of character of teeth as diagnostic of infantile syphilis than upon modifications of their own shape. It is when I find in the position which should be occupied by a six-year-old molar one or two lateral incisors, or

in the situation naturally occupied by incisors, premolars or canine teeth being erupted, that I feel sure the syphilitic influence alone has stuck the pegs in the wrong hole, for I have never noticed this phase of deformity of misplacement in tubercular teeth.

In acquired syphilis, where the toilet of the mouth is poorly made, or not at all, and the individuals use tobacco, gingivitis, pyorrhea, and retraction and exposure of the necks of the teeth, even necroses of the jaw, sometimes occur where no mercury has been given. And really it would be interesting to know what influence syphilis plays in the causation of the badly retracted gums so frequently seen in your offices.

"DENTAL JOURNALS," by A. C. Hart, D. D. S., San Francisco; from report of Com. on Literature, California State Dental Ass'n., 1895. The mediums open for the mutual exchange of thought and experience, and the ones most available to every practitioner, are the dental journals. They bring us face to face with the representative men, the substantial men, the heart of our profession, who make us feel and do what they do, in proportion to our power of appreciation. Through them we become seekers and doers of scientific truths; able to defend our profession, and possessed of that practical influence so necessary to the lot of man. Practical, because they have been one of the great sources for the advancement of the standard of dentistry, in that they contain the latest of everything—in theory, practice and mechanical ingenuity. He who would hope to make a financial success of his practice cannot afford to be without them; and not to have read and practiced their teachings is to be counted behind the times and unfit for active service.

The proceedings of our State societies, much of which is published from time to time, if read, would keep us well posted with regard to the advancement of dentistry.

With such great facilities for the interchange of thought and experience, it is greatly to be deplored that so small a percentage of practitioners read the dental journals.

"INFILTRATION ANESTHESIA," by C. S. Payne, D. D. S., San Francisco, read before the Stomatological Club of San Francisco, Cal. This term means that there is an anesthesia produced by

infiltration or distension by hypodermic means in the part to be anesthetized. The part becomes devoid of sensation from the fact that, the tissues being infiltrated, the blood is driven from the part, interrupting the circulation at that point, and by the compression of the periphery of the nerves.

It was and is used by Schleich, of Berlin, in making capital operations, such as ovariotomy; and I understand he uses at different times a 2-10 of one per cent. solution of common salt, and at other times a very weak solution of cocaine and distilled water.

The formulas that I present, and the method of their introduction, produce a more profound anesthesia, and for a greater length of time. The first is:—Cocaine, grs. 1; Sul. Morphia, grs. 1; Carbolic Acid, mins. 3; Chemically pure German double dis. gly., drams 6; Aqua distilled, q. s. to make a two-ounce mixture. This is a 1 to 1,000 or a 1-10 per cent. solution of cocaine. From investigations on this line I can assert that, if a syringeful, or portion of a syringeful, be injected into the gum tissue around the tooth to be extracted, and enough force exerted on the piston of the hypodermic syringe to infiltrate the parts and produce a zone of anesthesia, as is evidenced by the whiteness of the part, it is possible to remove the tooth without one particle of pain.

This formula is balanced up as follows: There is just enough distilled water added to the glycerine to make it flow easily through the needle, and my claim for glycerine is that, on account of the thickness of its consistency when forced into a part, it creates as great, or greater distension; and, owing to the fact that it is of an oily nature, it slides, as it were, through the tissue, not causing any pain; and, again, on account of its thick consistency, it is absorbed very slowly, localizing the ingredients of the anesthetic and giving a longer anesthesia. There are forty-eight syringefuls in a two-ounce mixture, and if you removed all the teeth from the superior maxilla at one sitting, you would not use any more in any case than six syringefuls, in which there is ⅛ grain of morphine, which is the ordinary prescribed dose to allay pain. The object of the morphine is to overcome that pain which occurs about an hour after an extensive case of extracting. There is no heart stimulant used in this formula, as, on account of the minute quantity of cocaine, it is not necessary.

Another formula, which I have used with much success, especially in cases of abscess, extraction of a single tooth, or a couple of them, is:—Cocaine, grs. 5; Sul. Morphia, grs. 1; Boracic Acid, grs. 10; Glycerine, drams 6; Aqua distilled, q. s. to make a two-ounce mixture. This is a 1 to 200 or a 1–2 per cent. solution.

These formulas are practically useless unless the method of their introduction into the part to be anesthetized is carefully followed. Your hypodermic syringe should hold twenty minims, and the needle should not be over ¼ of an inch in length. The dentist in using an anesthetic uses it almost exclusively for extracting teeth, hence he is injecting into the densest soft tissue in the body; and it requires a great deal more force to infiltrate this gum tissue than it does any other part of the body. The technic is as follows: Have a clean aseptic syringe, used for nothing else, and a bright needle; have the patient rinse the mouth with a 5 per cent. solution of carbolic acid; with the forefinger of the left hand press on the point on the gum about a sixteenth of an inch from the gingival margin, and turning the needle flat side down slide it in, using some force on the piston, and thus keep the anesthetic in front of the needle. The point of the needle being beveled, the anesthetic is forced at an obtuse angle from its opening, so the force of infiltration is in the direction just described, and by turning it you can direct and govern the area of the zone of anesthesia that is produced and is evidenced by its whiteness. For instance, if you were going to extract an upper first bicuspid, and you insert your needle as directed, by turning the flat side of the needle towards the second bicuspid you would infiltrate the tissues in that direction; and if you left the needle in the same puncture and turned the flat side towards the cuspid you would infiltrate in that direction. While you are injecting lay the forefinger of your left hand above the part being infiltrated at the point where the soft tissue joins the hard gum. If you find a reservoir, as it were, forming in this soft tissue, stop and make a new puncture in between the teeth; kept out of this soft tissue, as it will cause swelling. When you have the tissues on each side of the tooth so thoroughly infiltrated that they become white, that is sufficient and all that is necessary to accomplish a perfect result. After infiltrating the gum around the tooth, I force the flat side of my needle against the tooth and force it

down between the alveolar process and the tooth, and then, by pressure on the piston, force the anesthetic clear to the end of the root.

These formulas are practically harmless in almost any hands, and their efficacy is not due so much to the ingredients used as it is to the infiltration and localizing effect of the glycerine—being due almost entirely to the latter; for I am able to get the wanted result with the glycerine and this combination which I cannot get otherwise, although I may use the other ingredients in the same proportions. The glycerine must be absolutely pure double-distilled, otherwise it retains properties which are very irritating and will defeat the end you wish to accomplish.

Just why the eminent men whom I have mentioned use a solution which is near the salinity of the blood to infiltrate a part, except it is on account of its non-irritating properties, I cannot understand. This salt solution facilitates osmosis, and you lessen the duration of the infiltration. In the mouth, at any rate, the use of glycerine in infiltrating the part gives an anesthesia which lasts nearly twice as long, and the anesthesia is infinitely more profound.

The Buffalo Medical Journal for February, 1896.

"A NEW STYPTIC." Roswell Parks (*Medical News*, Nov. 16, 1895,) reviews his experiences with a spray of 5 per cent. solution of antipyrin, made up with sterilized water, as a styptic in surgical operations. He has found it an especially useful measure in parenchymatous oozing which complicted operations. It has been tried by many surgeons and found useful, having no deleterious effects, no matter where it was used. He has since found that a combination of antipyrin and tannic acid is still more useful. This mixture precipitates a thick, gummy, cohesive substance, which offers the most ideal styptic for certain purposes. An alcoholic solution of tannic acid is used and antipyrin added in quantity sufficient to form a precipitate of required consistency. This substance is particularly useful in hemorrhage from bone, for instance, in operations upon the cranium. A small piece of sponge or cotton sopped in it may be forced into a bleeding tooth socket, and in many other ways it may be very useful. There is but one attendant difficulty, due to its remarkable cohesiveness, that when

the time comes for detachment or separation it is difficult to remove it. Sometimes it has been necessary to wait for the formation of granulations and separation by natural process.

Journal of American Medical Ass'n. for February, 1896.

"COMMON GROUND OF MEDICINE AND DENTISTRY," by Joseph Roach, M. D., Baltimore, Md.; read before the American Medical Association, at Baltimore, May, 1895. For convenience, I will call dentistry one of the specialties of medicine, although it might be shown that it is so distinct and so peculiar as to make it well nigh a thing by itself and difficult to place with any of the specialties. If it be surgery, many operations consist in cutting out the decayed parts in an organ so constituted that it has of itself no power to make use of the vis medicatrix naturæ, found in other organs and tissues, and with filling the same with some foreign material. The sole use of that material is to prevent furthur progress of the disease and to serve as a substitute for grinding and cutting food.

There is no blood, no ligation of arteries, no stitches, no sutures are made; and the patient is dismissed on the spot cured by a surgery, of which it might be said, that its only relapses are due either to mechanical imperfections in the operations or to inherent faults in the structure repaired. True it is that one department of this work trenches on surgery thus far, that in the exploration of the canals, occupying the roots of teeth, either by a failure to remove living tissue or a failure to disinfect any decomposed tissue, a local sepsis may occur, resulting in abscess and occasionally invoking grave consequences. But even this does not ordinarily rise higher in the scale of surgery than the treatment of a felon on the finger. I have thus purposely taken a low view of the daily work of dentistry for this reason. I think possibly too much pains have been taken by its membership to elevate a most useful, nay, a most indispensable calling, into a position to vie with surgery proper. I say daily work, for while it is true that, as dentists, we are occasionally called upon to repair a fractured maxilla or even extirpate a tumor of the jaw; such operations are but occasional, and in the nature of the case it seems to me to fall as naturally into the domain of the general surgeon as does the fracture of the femur. The true usefulness of the dental surgeon

in such cases rests in his ability as mechanician to skillfully form and adjust special splints in case of fracture. This ability he forms from his daily work noticing artificial dentures, or in his possessing special cutting instruments in the form of burs, etc. for the dental engine, instruments peculiarly adapted for his own work in removing decay from teeth, and turned to occasional use as above in removing tumors. Still, none the less skillful is the work of making plates, crowns, bridges, etc., where to the dexterity of the mechanic must be added the fine eye of the artist, restoring sunken features, harmonizing incongruities, and above all, and most perplexing of all, pleasing or failing to please the tastes of fading humanity.

But while all the above may be true, and the work of the average dental surgeon may be largely mechanical, the fact that both the surgeon and he work on the human body makes a bond of union between them which is worth study, inasmuch as whatever links in this bond are found to be the common property of both are of much greater interest than any dissimilar points.

Of the maladies of common interest I will mention those often obscure and occasionally grave diseases that involve the maxillary sinus. This is obvious, for the reason that in such cases the dental surgeon very often is apt to be the first observer on the ground. For whether we view these diseases as arising from diseased teeth, or from some more remote and obscure cause, the dental surgeon, if he be ready to take up such cases for himself or turn them over to the surgeon, is none the less called on to diagnose accurately the symptoms, that they may be treated as purely from tooth-trouble or he may proceed on some other line. It is not in the province of this paper fully to describe all the various troubles that may arise in the maxillary sinus, but if you will throw with me a rapid glance at its position and uses, it will be of service in following any line of treatment that may be suggested. It is situated above the so-called jaw teeth on either side of the upper jaw, and extending from the first bicuspid (sometimes the cuspid) backward to the second molar of the same. Its size varies, its exterior or facial walls are quite thin, the palatal wall stronger, and its floor very variable in shape and thickness. The only opening into it upward is into the nasal cavity. The situation of the cavity is surgically important, for

when we consider the tendency of all mucous-membrane covered surfaces to catarrhal troubles, and the position of any cavity without natural drain, shut in by bony walls, and its only outlet narrow and pointing upward, we see at a glance how the difficulty or impossibility of any natural drainage, and the tendency of fluids once accumulated, could give even more trouble than does occur. Indeed, if we consider the tendency of catarrhal troubles to spread by continuity of surface, it seems a wonder that all cases of chronic nasal catarrh do not involve engorgement of the antrum itself. Certainly this is what one might expect. Yet it would seem that this is not only not true, but that, on the other hand, certainly from the partial view of the case taken by the dental surgeon, the lighting up of antral trouble can be traced often to diseases of teeth, the roots of which lie under its floor.

The dissecting table reveals to the dental pathologist a curious state of affairs just here; but, in order to grasp this situation fully, it is necessary to state what comes much more closely under the observation of the dental surgeon, a fact that only the physiognomist studies as it should be, and that is, that inheriting our tendencies we inherit a mixture. Small jaws with large teeth are the rule, occasionally large jaws with small teeth; the back teeth of the father and the front teeth of the mother, or vice versa. The jaws are sometimes so narrow and cramped, and the teeth so large, that they crowd each other, and such a lack of blood in the jaw, from non-use in mastication, makes bone and muscle without stamina. The result is, that the large teeth of the upper maxilla, the roots being formed physiologically, by addition to their length, are either forced through the floor of the antrum, or else, in the evolution of that chamber from six years to twenty-one, the periosteum fails to build thickly enough to cover those roots.

They are, however, always covered by the membranous lining of this cavity, else the vessels passing into the foramina of these teeth would be exposed to the atmosphere. All this is not likely to involve the antrum in pathologic trouble so long as the roots of these teeth are sound, but it may be fairly stated that more than one-half of the patients falling into the dentist's hands sooner or later have pulpless molars, the roots of which project through the floor of the maxillary sinus and are objects more or less irritating to the tissues against which they rest. Again, in

the case of molars, the roots of which do not pass through the antral floor, in the event of devitalization an ordinary alveolar abscess may occur, with the sequelæ of absorption of the alveolar plate at the tip of the root and the outflowing of pus into the antrum itself. It is true that an abscess in such situation might not be of grave consequences, yet it is plainly a situation of risk. This may not often exist, for the reason that the widely forked roots of the upper molars, and their nearness to the outer walls of bone, cause development of fistulous openings away from the antrum, yet it is a source of danger and as such should be studied. Dentists devitalize and remove the pulp from the roots of such teeth. This is a very usual, almost daily, operation. But while an earnest and faithful effort is made to perform this operation thoroughly, so attenuated are the canals of the molars that it is not at all certain that all the pulp is removed. In such a case it is easy to see that any filling material forced into the root canal may force particles of dead tissue through the foramen and into the tissues above, inoculating these with septic matter; or if disinfectants have been used there, such as carbolic acid, corrosive sublimate, etc., they may be forced through to the injury of a tissue which has, as described in the outset, no drainage in case of chronic irritation. I have said enough on this subject, I dare say, to call your attention to certain lesions of the antrum that are common ground of observation and treatment of both dentist and surgeon, and call attention in conclusion to a case, sometimes very grave, always painful, that of an impacted and abscessed lower third molar.

The same causes to which I have already alluded as dwarfing the upper jaw, conjoin to make the lower both small and short. In the evolution of the lower wisdom tooth it seems less often to share in the dwarfing process than the corresponding upper tooth. In a word, it is often too large for the space between the second molar and the angle of the jaw. In consequence its eruption is so interfered with that it may be either only partially erupted, or it may be impacted at an angle against the second molar, appearing through the gum slightly or not at all. Abscess of this tooth often involves not only the tissues immediately around it, but the tissues of the throat become inflamed and grave results ensue. It is pretty well established that throat trouble of a seri-

ous or even fatal character has been set up by an agency seemingly so unimportant. Abscess opening into the pharynx is certainly one of the sequellae of this trouble. I have been told of cases where the infiltration of pus between the muscles of the neck and connective tissue proceeded to the formation of fistulous openings on the stomach, with ordinary results of blood poisoning.

I have said enough to indicate a common ground for dentistry and surgery.

"Pathology and Etiology of the Diseases of the Accessory Cavities of the Nose"—Our knowledge of the morbid processes in the accessory nasal cavities is very limited. The inaccessibility of these places is no doubt largely responsible for this fact. A very important step was introduced by Harke, who devised a practical method of gaining access to the interior of the nose and adjacent cavities during post-mortem examinations without any disfigurement of the face of cadaver. The method is as follows: After removing the brain in the ordinary method the soft parts are reflected anteriorly down to the root of the nose, posteriorly down below the foramen magnum. Then the floor of the skull is divided in the median line by means of a keyhole saw from the nasal bones in front to the occipital foramen behind, keeping as nearly as possible to the median line. Now the two halves of the skull are separated by means of a broad chisel and mallet, and as the nasal and pharyngeal cavities come into view, the pieces of mucous membrane may be cut across with the knife or scissors so as to prevent further tearing. With the hammer and chisel the axis may be divided. The two halves of the skull are still connected by the nasal bones, the maxillary process of the upper jaw and the palate; strong traction will separate these bony connections without injury to the soft parts, and the lateral halves of the skull will yield sufficiently to allow inspection down to the vocal cords. The partitions between the accessory cavities are readily cut away with scissors.

Among fifty cases examined exclusively for the purpose of showing whether the normal mucous membrane of the accessory cavities of the nose is free from bacteria or not, Frænkel found only twenty-eight to be available for this purpose, *i. e.*, normal,

and of these twenty-eight only thirteen were completely sterile. The remaining fifteen showed micro-organisms to be present most often in the antrum of Highmore (eleven times), then in the frontal sinuses (six times), and least often in the sphenoidal sinuses (five times). Without going into complete details it may be said that the following microbes were found in the order of frequency in which they are named: The diplo-coccus lanceolatus, the yellow pus coccus, an organism morphologically like the bacillus diptheriæ, the bacillus coli communis, and two hitherto undescribed bacilli. The diplococcus lanceolatus was found oftener than the others in each of the cavities; it was frequently single, but also in company with some of the other microbes named, most often with the pus cocci. From the results of this phase of his studies Frænkel concludes that in a large number of normal accessory nasal cavities there occur micro-organisms which, we know, play an essential role in the inflammatory processes of the respiratory tract. In 40 per cent. (sixty-three cases) of the post-mortem examinations of the nasal cavities there were morbid changes present. In thirty-seven cases the process was limited to a single cavity. The antrum of Highmore thirty times (right seventeen, left thirteen), and the sphenoidal sinuses seven times. In eighteen cases two cavities were involved at the same time, both antra of Highmore seven times, one sphenoidal sinus and antrum of Highmore eight times, both sphenoidal sinuses once, one sphenoidal sinus and one frontal sinus once, and frontal sinus and antrum of Highmore once. In six cases three cavities, and in one case four, and in one case all six accessory cavities were involved. The general result may consequently be said to show that the antrum of Highmore furnishes by far the largest contingent of cases of disease of the accessory nasal cavities, then comes the sphenoidal sinuses, while the frontal sinuses furnish but a small number of cases. Systematic examinations like this are the only means that would lead to any definite information concerning the relative frequency of disease in these various centers mentioned.

In regard to the nature of the pathologic processes present, Frænkel found that inflammatory or exudative changes are by far the most frequent. The exudate may be serous, mucous, muco-purulent, purulent or sanguineous. The quantity is variable. In quite

a number of cases the mucous membrane contained cysts which most likely were due to retention. Zuckerkandl doubted the ability of the mucous membrane of the antrum of Highmore to form pseudo-membrane, but one observation of Frænkel's shows that it may form fibrinous false membrane. The histologic changes in the mucous membrane most frequently present were those more or less characteristic of inflammation. The microbe most frequently found in the diseased cavities was, again, the diplococcus lanceolatus, quite frequently in association with other germs, especially the pus microbes. Various members of the latter group were also found alone. Once the influenza bacillus was demonstrated to be present, the cause of death being pneumonia in the course of influenza. The colon bacillus was found once. A bacillus mucosus capsulatus, Frænkel, hitherto undescribed, was also found in a few cases. The action of these various micro-organisms is inconstant, and the character of the changes present does not allow any inference as to the kind of infection at hand. The same microbe may cause different forms of disease.

Suppurative processes in any of these cavities always form a menace to the health and life of the individual. Both Harke and Frænkel call our attention to the fact that in atrophic and marasmic children it is not unusual to find chronic suppuration in the antrum of Highmore that might be regarded as the source of a chronic intoxication. Frænkel has also observed a case in which a chronic empyema of the frontal sinuses was followed by thrombo-phlebitis of the longitudinal sinus and consecutive pyemia. In general infectious diseases as, for instance, fibrinous pneumonia, inflammatory conditions of secondary origin may arise in the nasal accessory cavities, which may become chronic and in turn act deleteriously upon the whole body. While Zuckerkandl regards the diseases of the accessory cavities as oftener secondary to nasal affections, Harke and Frænkel both conclude that in the main the acute inflammations of the accessory cavities are entirely independent of the affections of the nose proper. It is a significant fact in support of this view that Frænkel in his investigations found only nine cases of disease in the main nasal cavity and that in five of these the mucous membrane of the accessory cavities was normal. It is also a quite general belief that the most frequent cause of empyema of the

antrum of Highmore is the extension of morbid processes connected with the teeth or their alveoli. This view is upheld by Zuckerkandl. Harke and Frænkel both find, however, that the frequency of the dental origin of inflammation in the maxillary sinuses has been greatly overestimated. Out of all his cases Frænkel found only two in which the process in the antrum could be referred to the teeth. Frænkel consequently makes the general statement that in the majority of instances inflammation of the maxillary sinuses develops independently of pathologic changes in the neighborhood, and that certain general diseases play a much more important part in its pathogenesis than has been assumed. These anatomic studies also seem to show that the relation of nasal polypi and of inflammatory swellings of the infundibulum to the diseases of the antrum is the reverse of the usual teachings, in so far as no evidence has been brought forward that polypi and the like are secondary to disease in the antrum, which is the view usually held by the clinicians. Finally, attention is also directed to the fact that the inflammations in the mucous membranes of the accessory nasal cavities do not seem to give rise to lesions of the bones unless specific processes like tuberculosis, syphilis, or leprosy are present.

The Ohio Dental Journal for February, 1896.

"CAPPING PULPS," by Dr. Gordon White, Nashville, Tenn.; read before Southern Dental Association, Nov., 1895. I believe that, in the field of dental operations, the capping of the dental pulp is as successful, properly performed, as the average dental operation. Capped pulps do live. My method of capping is as follows: The patient rinses the mouth with as warm water as can be used comfortably, to which is added a little alcohol or a few drops of an antiseptic. The cavity is then washed with warm water from the syringe and is excavated as usual, and occasionally wiped out with a small pledget of cotton saturated with chloroform. Using sterilized scissors and foil pliers, a made cap is cut "from a prescription blank" and dipped in chloroform, which quickly evaporates, leaving the paper of its original stiffness, and sufficiently sterilized. On this cap with a small pointed sterilized instrument is placed the smallest particle of a chloropercha solution to the chloroform, and in making the solution,

fifty grains of aristol to the ounce of chloroform should be added. This little plaster is turned over on the point of pulp exposure and gently pressed to position with the smallest piece of spunk, and a few drafts of hot air thrown on the cap, which evaporates the chloroform from the solution, leaving the cap sticking to its position, when thin cement is flowed over it and the filling inserted as desired.

"An Interesting Case," by M. H. Fletcher, M. D., D. D. S., Cincinnati; remarks before Miss. Valley Society, 1895. Ten days ago I took from the lower portion of the left side of the lower jaw a small tumor, which has the characteristics, as far as I can tell, of a malignant growth. It seems to me these tumors have an exciting cause, and these causes may in their origin be connected with the pathology of the teeth. They may arise from the extraction of teeth. This case that I speak of that I treated ten days ago was sent to me after a week's suffering from an extracted lower molar. There was intense inflammation of the lower jaw on the left side. The bone about the sockets of the teeth was highly inflamed, and the soft tissues were exceedingly tender. I took this, at first, to be a matter of poisoning from bad forceps, unclean forceps. Whether such was the case or not I do not know. Since then an additional tumor has shown itself just posterior to that one; and ten days after taking this tumor off I found it one-half the size it was before. That was about ten days ago—pretty nearly time for it to return again. If I still find that growing, that is, if it has started again, I shall feel considerably exercised over this man's future. He is a strong, healthy man, thirty-five years of age, and has every condition about him to indicate that he has a malignant tumor, so far as I could see. This particular specimen is of special interest, from the fact that a molar tooth, superior wisdom tooth, has been carried clear out of its place, the crown of it directed toward the nose, but about the junction of the vertical plate of the palate bone where it joins on the superior maxillary. Here I consider the exciting cause. I found between the teeth where this had been—an incision was made after the amputation—and I found a membrane going in from the mouth, showing that irritation of some character probably started at that place. My theory is, that from dental lesion there was sufficient irrita-

tion of the periosteum on the floor of the antrum to start a growth in that particular position. As the history, which I read, shows, this tumor started at about five years of age. At that time the dental follicle holding the wisdom tooth was far enough back, and far enough up in the antrum at that point, which I expect to explain in one paragraph, to undermine that follicle, taking with it the bone that surrounded it, that is, making a complete circuit, almost coming around until the crown of the tooth points toward the nose; and it can be accounted for in my mind only in that way; this tumor, starting at the edge, simply carried with it the dental follicle and its surrounding tissues, and pushed it about the antrum until it was finally landed where you will see it on examination. This case is very interesting to us because of this particular feature of exciting causes which may arise from teeth. The exciting causes may be old roots of teeth, salivary calculus, alveolar abscess, in fact, anything that continually irritates the tissues in these localities; so that it behooves us as a profession to look after these things, and be ready when there is a semblance of cause of that kind of trouble to remove it. The rough edges of worn teeth, broken teeth, everything of that character that can irritate the mucous membrane, may cause a malignant tumor.

The International Dental Journal for February, 1896.

"RESISTIBILITY," by Dr. G.A. Mills, New York. We are indebted to the late Prof. Garretson for the use of this term, and we think that a consideration of its wide-spread application might be profitable. We are sure that as dentists we are widely at fault in the care of our patient's humane interests. Doubtless the cause of this lies in the fact that mechanics have ruled a larger part of our procedure in practice The need of the hour was never so apparent that we should know what to do and why we should do it.

True science has not been our practical leader. While a few have had the ambitious industry to investigate, too many more have laid back and cavilled at the impracticability of "so much science." But who will have the hardihood to say that these delving labors have not caused us to be face to face with the stern necessity of true scientific knowledge, so that the best may be done with our daily practice? We should say thanks to those

who have given us some facts that now form a nucleus for future, better doings. Dealing with life is a more serious and responsible affair than many take into their thoughtful consideration—some from a lack of thought, and many more because of their mad race for gain. We wish that the hope for better things might be looked for among the mass as the advance along the lines of a more liberal culture that just now we hear emphasized is carried out. "Resistibility," simply interpreted, means how much can the bodies bear from us in the application of what we apply as remedial. Disease always advances in the lines of least resistance. Some bodies are so fortified that a vast amount of malpractice will make no inroad, while others are easily affected and laid under great stress of danger, sometimes beyond the possibility of recovery. We are constantly coming in contact with such evidences. "Health is the most perfect germicide." This maxim embodies the whole subject in a nutshell. Idiosyncrasies are more or less exceptions to the rule that is considered general. The application of this knowledge, found in the term we are considering, is invaluable in making a diagnosis. We say that some are born with endowments—special, of course. They have an advantage; but study and observation will, or can, enhance an acquired ability. Some have not the capacity ever to attain the ability for helpful service to living tissues. They have no surgical capacity. As an illustration: In a case where alveolar abscess had been dealt with successfully, but the practitioner did not know it, and had vigorously used the bur, and the result was that he had produced a large ridge of scar tissue which he mistook for a further disturbance. The patient died not long after, not because of this blunder, yet had he lived he would have gone on inflicting his ignorance. Never was there more need of care and caution in the thought of our subject than these days of parlor machinery that is so manifested in practice. We do believe in the value of motor power in our practice, but we also tremendously believe it is shockingly overdone. Too much of this is for effect, and some in order to be on a footing with our neighbors. It should be always our desire to perform operations within the line of the least infringement of sacrifice in time and endurance that may be essential for the best results. Indefinitely we could enumerate the lines of application of this term.

"HYPNOTISM; ITS VALUE TO THE DENTAL SPECIALIST," by D. G. F. Grant, Boston; read before the American Academy of Dental Science, Oct. 2, 1895. It seems too great a trespass upon your time to enter into the history of hypnotism, for it extends very far back into the earliest of recorded history. My wish is to take up the latest writers and observers on the subject and glean from them what can be made valuable to us. One will find here rather puzzling variations of views. First, as to the methods to be employed in the induction of the hypnotic state. Second, as to what percentage of people are susceptible to hypnotic suggestion. There are many other points upon which the opinions of students of this science differ, but I have selected those bearing most directly upon what it is desired to consider in a short essay.

The first great question is upon the means of producing hypnosis. Abbe Faria said, in 1815, "The cause of sleep was in the person who was to be sent to sleep." "This (says Moll) is the main principle of hypnotism and of suggestion." Besides this we have the rapidly-revolving mirror of Luys, used to produce speedy and extreme fatigue of the eye, the magnetic pass used by older magnetizers, the sound produced suddenly by striking a large gong, or a sudden ray from a Drummond light. The effect can be produced through a sense of touch, even by gentle stroking of the skin. Others produce it by touches on the forehead, pressure upon the eyelids, etc. Then comes fixed attention, which is considered by some as the only means, while others combine it with mental methods, as Bernheim does. Dr. Bonwill, in a paper on this subject, lays great stress on self-assertiveness on the part of the operator, and that "suggestion should be made in a loud, commanding tone, like a general commanding an army." Dr. Warren and Dr. Faught, in discussing the paper, agreed that loudness of speech and commanding tone were quite unnecessary, as the same result could be obtained by a quiet tone. Professor Newbold says, "Of all the means of heightening suggestibility with which we are acquainted, none is so easy of application and certain in its effects as the concentration of attention and limitation of the conscious field." Dr. Osgood, of this city, says that the passes are unnecessary and smack of charlatanism.

I will now call your attention to the question of susceptibility.

Some claim the ability to hypnotize all subjects, even against their will (Donats), while others place the percentage very low. Liebeault claims ninety-two per cent., Delbeouf eighty per cent., Bernheim and Ford claim over eighty per cent., while Bottey claims only thirty per cent., and Moll only twenty per cent.

It seems to be generally agreed among men who have used hypnotic suggestion as a therapeutic agent, or as a means of performing painless surgical operations, that many complicated conditions exist, or may arise, which can only be properly met with by a systematic training, followed by careful and oft-repeated experiments. All this precedes the application of this science. We must first master the subject, then apply it to our specialty, if we intend making use of it.

Here a thought occurs which to me seems to have an important bearing upon our view of expediency. The medical man would in all probability not find it necessary to induce the hypnotic state in many cases daily, nor would the surgeon perform operations continuously every day for from six to eight hours, as the dentist does. The majority of patients who visit the dentist require operations of a painful nature, while of those visiting a physician only a small percentage require or receive immediate surgical treatment. This seems to me an important point for consideration, as even the most skilful or enthusiastic hypnotist would find that, whether he gave himself up to his subject or the subject submitted wholly to him, there would be so great a drain upon his mental force from such a continuous exertion, that when added to the physical and mental strain, inseparable from daily practice, it would tax the ordinary practitioner beyond his strength.

This seems a moderate view of this aspect of the question. While most of the men who have written, especially upon the dental side of the question, have given the impression that the art is easy of application, the very reverse is true of what the medical writers have to say. This is rather remarkable in view of the peculiarly sensitive organs upon which dental operations are to be performed; and, further, that all authors are not agreed that insensibility to pain is a feature of hypnosis. One rather gets the idea that that it is a condition of unconsciousness of pre-existing pain, rather than insensibility to inflicted pain. A consideration

of these observations rather leads to the hypothesis that the dentist sometimes mistakes a faith established by his reassuring manner for an hypnotic condition. I think Dr. Bonwill's paper on hypnotism is a stronger exposition of what may be accomplished by considerate preparation of a patient for operation than it is of the value of hypnotic suggestion.

There is this much to be said of the results of investigation of this subject in the hospitals abroad, notably those of France and Germany, where most is known and the most extensive experiments have been made, that their results can only be regarded as establishing the existence of this great power for the benefit of mankind under conditions of nativity, habit of obedience, and strong predisposition to accept what is offered in the way of treatment. We all know that hospital practice is a widely different thing from office practice, and, if I am rightly informed, the physicians of foreign hospitals exercise far greater powers over the patients in such institutions than are permissible in kindred institutions in this country.

In my opinion the more thoroughly one reads and investigates the subject, the more clearly the fact is established that for our purpose it presents too many complex problems and requires much furthur investigation by minds trained to that especial kind of work. If it is to be used as an adjunct in dental operations, patients should bring their trained hypnotist to the dental chair, leaving the dental specialist to the performance of his legitimate functions. In support of this last clause I cannot find better words than those of Dr. Osgood: "The dentist has no business to try to relieve every trouble of which a patient may complain, any more than I have to clear out a dental cavity without proper education and experience."

The Dominion Dental Journal for February, 1896.

"USE AND ABUSE OF THE DENTAL ENGINE," by Mark G. Mc Elhinney, Ottawa, Ont. Amongst the many appliances necessary to the dentist the engine is one of the most important. It can accomplish easily and in a short time what, by hand, would require considerable force and a much longer time. Having, as it has, so many good qualities, and offering, as it certainly does, so many short cuts on so many operations, it is not surprising

that it should have become almost universally abused. Not only is the engine itself wrongfully treated, but it is used in operations where, in the common interest of humanity, it has no business. A dental engine is a piece of fine machinery and must be treated as such. It should not be subjected to strains greater than it is intended to bear. It will carry a certain size of tool in the hand-piece, according to the strength and stiffness of the arm, cable or cord attachment, and if a larger tool is used the engine will suffer. It will stand a certain pressure upon the tool, and if the pressure be increased unduly there will be trouble. The chief wrong uses to which the engine is put are grinding up artifical teeth and boring holes in metal. It is false economy to use a fifty dollar engine upon work that can be better done on a ten dollar lathe and a dollar drill-stock.

One of the tests of a good mechanic is delicacy in handling tools. A true mechanic will apply just the required amount of force to accomplish the object, and not a particle more. Moreover, a skilful mechanic always maintains a counteracting force which is used to guard against the slipping or breaking of the tool. It is this guarding that enables the tool to cut so far and no farther. There is no tool used in dentistry that requires such skillful handling as the dental engine. Mechanical skill is the foundation of dentistry, and no one can hope to excel who is incapable of mechanical training.

I have seen a dental engine used upon artificial teeth with pressure sufficient to grind an axe, the engine sticking, jerking and slipping until I expected to see it fall to pieces, like the parson's one-horse chaise, of old time story. An engine used like this will be a complete wreck in six months, and then the dentist will abuse the makers because it will not do the work of a small machine shop. A good engine will, with good treatment, last a long time, probably as long as the ordinary dentist lives to use it. A dental engine must be used with continual regard towards its lightness and delicacy of mechanism. It must be cleaned, oiled and adjusted as often as is required to keep it at its best. It requires very little oil, and that must be of good quality. Great care must be exercised in taking it apart. There is nothing so unsightly as battered nut-corners and scratched screw-heads, whether they be on a dental engine, a gun or a bicycle. It must

be borne in mind that set screws and nuts are powerful levers, and can exert a force far greater than the material and surrounding parts can bear of themselves If a dental engine is allowed to get loose and unsteady, it entails much more suffering upon the patients, and, therefore, the condition of a dentist's engine is an index to his consideration for his patients.

The abuse of the engine in operating is a far more serious part of the question. It requires as great or even greater skill to use the engine than it does to work by hand, and yet it has been remarked that the poorer the operator the greater use he makes of the engine. It has also been noticed that in the dental colleges the engines were always in greatest demand by those who were the least fit to use them, and consequently the suffering caused thereby was much greater than necessary. Clinical instructors should pay particular attention to the manner of use of the engine by students, especially as few students have much to do with that instrument before entering the infirmary.

That the engine is abused, even by dentists, is shown by the fact that patients, as a rule, have a horror of it, and many neglect their teeth on account of their fear of its use. A good general rule may be deduced from experience, and that is, never use the engine on sensitive teeth except where the requirements of the case demand heroic treatment. By sensitive teeth is here meant those having sensitive dentine and those sore from periosteal and kindred troubles. Many persons have a positive horror of the buzzing sensation of the engine, and it is willful and unnecessary cruelty to use it where any other means are possible. To accomplish many operations by hand certainly takes more time, and time is money, but reputation is money also, and in the long run the balance will be in favor of the dentist who avoids causing unnecessary pain. In ordinary superficial cavities well-shaped and sharp excavators will accomplish the work in very short time, almost painlessly, while a bur used even very carefully is liable to cause some inconvenience. Much of the discomfort attendant upon dental operations is not so much in actual suffering as in the anticipation of it; hence, the dentist should avoid the use of whatever will, by its intricate and formidable appearance, suggest the possibility of pain. The engine is a most formidable looking instrument, and to some patients suggests the horrors of

the inquisition, therefore it behooves the dentist to keep the aforesaid formidable instrument as much in the background as possible.

The later models of electro-dental engines, by their compact form and general innocent appearance, are a great improvement in this respect, provided always that the wires are concealed, for few things produce such creepy feelings in the lay mind as the "deadly wire."

"An Uncommon Case"—Dr. Daish writes about a case which is very interesting in reference to its successful treatment, and especially its etiology. A girl, thirteen years of age, presented herself at the office on the 23d of June, with a swelling on her lower jaw, left side. The first molar and first bicuspid were quite healthy, the second premolar also appeared to be sound, but as this was the last of the temporary teeth, it was extracted in the hope of reducing the swelling and giving the second bicuspid an opportunity to erupt. The roots of the temporary tooth were only slightly resorbed. As some pus came out of the alveolus after the extraction, a poultice was prescribed for a few days. The girl did not come back till after several weeks. The poultice had been used, as there was still pus which had a very disagreeable odor. On the 13th of August she was sent to the hospital, and on the following day she was put under the influence of chloroform to find and remove the second bicuspid. The swelling was about the size of a hen's egg, into which an incision was cut from the first molar to the first bicuspid. A large quantity of disagreeable pus flowed from the cut. After much probing the tooth was found, but the position of the roots could not be determined. All attempts to extract it failed. It was determined to pack the incision with iodoform gauze, and wait for a few days. The tampon was renewed every day after the cavity was syringed with boric acid. On the fourth day it was possible to again find the tooth with a probe. It was now close to the first bicuspid, and not far from the opening. Unfortunately in probing it was pushed back to its original place, from which it could not be removed. On the following day, on removing the tampon, it was again found close to the opening, and, with care, was removed with an elevator. Patient remained in the hospital three weeks, during which time

the wound was treated daily with kali permangan, or boric acid and iodoform gauze. From what could be learned from the girl, the malady was caused by a fall down a flight of stairs some four years previous. A few days after this accident the premolar became very sensitive, and mastication was difficult, but she did not complain nor consult a physician until it took this aggravated and painful form, when she consulted Dr. Daish. In examining the extracted bicuspid he came to the conclusion that in falling a blow or pressure was exerted on the developing root which injured the pulp and caused it to die before it was fully developed. —*Monatsschrift fur Zahnheilkunde.*

Items of Interest for February, 1896.

"COCAIN," by Dr. F. S. Brooks, Martinez, Cal. Being interested in Dr. N. S. Hoff's article on "Cocain," I will give my experience. While agreeing in the main with the Doctor, I think he is slightly in error in stating that cocain should never be used in stronger than two per cent. solution, unless he refers to the pure article, uncombined with other drugs, which I do not consider safe, even in two per cent. solution, for indiscriminate use hypodermically. I have had a number of disagreeable experiences with it; one while using the pure cocain in two per cent. solution. The patient was a strong healthy man of thirty-five years of age, had formerly traveled with a circus, giving exhibition of his strengh of jaw and teeth. I injected into the gums of a tooth he wished extracted about five minims of the solution of cocain. He immediately became very pale and nervous, then perfectly limp and unconscious, the perspiration fairly pouring from his body, the heart almost ceased action, and respiration became difficult. He was immediately placed in a horizontal position and allowed to inhale alternately for a few moments nitrite of amyl and ammonia, which had the desired effect. I was able to proceed with the extraction in a half-hour. I know of no way by which you can forsee these evil results. They seem to occur as frequently with the strong as with the weak.

I have used solutions of the pure article in strength varying from 1 to 5 per cent. many times with no bad effects, and usually as good results from 1 per cent. as from 5, except where there was some inflammation. But the exceptions to this rule are too

numerous,so I use this formula:—Atropin sulf., gr. ss; Strophanthin, gr.1-5; Carbolic acid, gr. 5; Cocain mur., gr.20; Water, q.s. 1 ounce. M.; which, as will be seen, is a 4 per cent. solution of cocain. I have used this in several hundred cases with no bad effects. Some time ago I reduced the quantity of cocain to 15 grains, thus making a 3 per cent. solution. I also add 5 to 10 drops of glycerine. The results are very satisfactory. The advantage this formula possesses over that of Dr. Hoff's is, that it is always ready for use, as it will keep indefinitely. I have kept it good over six months. I have on more than one occasion extracted as many as seven teeth at one sitting. My method, where I have a number of teeth to extract, is to inject the solution into the gums on both sides of one tooth, then extract it and proceed with the others in the same way. In this way you avoid getting so much of the drug into the system as when you inject around all the teeth before extracting, and it is not necessary to wait, as some say, ten or fifteen minutes to get the full effect; it acts immediately. I have used it on all classes and conditions of people, neurotics, consumptives and people with very weak hearts, and so far have had no trouble. It acts like magic in extirpating live pulps.

The Dental Cosmos for February, 1896.

"Four Consolidated Dental Implantations," by Dr. Oscar Amoedo, Professor of the Ecole Odontotechnique of France. About two years ago Miss P. noticed that her two superior right incisors were enlongating and aching, though they were not decayed. She went to a dentist, who, she says, having extracted the central incisor, discovered an abscess at the end of the root. He then made her a small plate of rubber holding an artificial tooth.

A few months ago she was greatly astonished to find that her "false tooth" was also elongating. She then noticed a tooth appearing in the spot from which the central incisor was extracted. Ever since she has been unable of course to wear her artificial denture. When she came to consult me, I found her dentition to be as follows: On the left side the first bicuspid had lost its crown three years previously. Its roots were perceptible at the surface of the gum. On the right side there was still the temporary cuspid; the lateral incisor was almost gumless, its free

margin having been badly worn by pressure from a small metal clasp attached to the plate made by the dentist who had treated the patient before she came to me. Pressure on the gum caused pus to ooze out about the neck of the tooth. In the position of the central incisor her permanent cuspid had erupted.

January 6 I began an operation by extracting both roots of the left first bicuspid, and, after having enlarged the alveolus, I implanted in it a bicuspid extracted three days previously from a child for the purpose of regulation. January 29, in presence of about thirty colleagues who came to honor me with their assistance, I extracted the permanent cuspid, the lateral incisor, and the temporary cuspid. I enlarged the alveolus of the temporary cuspid and reimplanted in its right place the patient's permanent cuspid, after removing the pulp and filling its chamber and canal. I enlarged also the alveolus of the lateral incisor, and implanted a lateral incisor with decalcified root. The alveolus left by the permanent cuspid pointed obliquely from top to bottom and from outward to inward. I made this alveolus vertical, and implanted in it a central incisor with decalcified root. These two incisors were removed from a patient suffering from pyorrhea alveolaris. A ligature of platinum wire solidly held the teeth in their place while the work of consolidation between them and the bone was progressing.

During the operation I made numerous injections of cocain, in consequence of which the patient did not suffer throughout the formation of the new alveoli in the bone. The results have been most favorable. The patient went next day, as usual, to her work. She had neither pain nor inflammation, a clear proof that the operation had been performed with strict antisepsis. I had to tighten the ligatures from time to time, and at the end of three months I removed them altogether.

"Narcosis and Forced Respiration," by Dr. C. S. Butler, Buffalo, read before the Union Convention of the 6th, 7th and 8th District Dental Societies, at Binghamton, October. 1895. He said that nitrous oxid should never be administered unless the nose was left free for the admission of air, and this requirement is equally true for other anesthetics. The whole process of anesthesia is simply an assault upon the functions of vitality, and the

operator can never know positively when the line of safety may be passed. In 1847 the action of anesthetics was described as first affecting the cerebrum, overcoming consciousness and intelligence, then the cerebrum and the spinal cord, so preventing involuntary movement, and last the medulla oblongata, stopping the action of the lungs and heart. The points here laid down have not been changed, except that later physiologists hold that the sympathetic system plays a more important part in anesthesia than was first thought. Anstie, he thought it was, said the sympathetic system was the first to be affected by and the last to be overcome by the anesthetic used. Now with these general observations we are all prepared to realize that there is always a possibility of danger, and that we should always be prepared with every facility and remedy to overcome the dangerous symptoms when they appear. And we know that all remedies fail sometimes. Forced respiration as a resort in desperate cases has caused much discussion, and only within the last two years the celebrated Marshall Hall said that it should never be resorted to, but in the light of recent occurrences physicians are now beginning to realize its value and importance. His own personal experience has shown its value, and he would be glad to impress it upon all. He believed there were many cases where death might be averted by its use, and showed the apparatus and manner of working it.

"Some Practical Points in Porcelain Work," by Dr. A. C. McAlpin, Warren, Pa., read before the same societies. A conspicuous and radical fault found in porcelain operations is the carelessness with which colors are selected, the universal tendency being to choose too light and too yellow shades. The operator, disregarding the habits of his patient with regard to his teeth, selects porcelain facings and fillings to match the newly polished or dry teeth, when oftentimes he well knows that the patient will allow the teeth to lapse into the old condition, and that the porcelain will not gather a like deposit with the natural teeth. A highly glazed porcelain facing on a crown should rarely be left. It may be remedied by deadening the surface with sand-paper disks and polishing with buff and pumice. In porcelain fillings the color of the cement used as the retaining medium influences the shade, and should be carefully selected.

The operator in porcelain work should abandon small approximal fillings, and confine himself to labial fillings, conspicuous corners, and tips on teeth eroded or worn to cup shape. A porcelain filling involves the preparation of the cavity in such a way that the matrix can be easily withdrawn, without affecting its shape, and the completed filling can be inserted. Very acute marginal angles in the fillings should be avoided.

The use of separators enters largely in the successful insertion of approximal fillings and simplifies an operation when many times it would seem impossible to insert the filling with a sufficient body to it for anchorage. To form a porcelain filling, take platinum plate of a gauge as thin as it is possible to use without tearing, anneal it to white heat, cool and place it over the cavity, forming a matrix by pressing it to the walls with cotton pellets, rolled hard, rubber points and burnishers, and getting the matrix well defined by burnishing it to the marginal lines and over the surface of the tooth around the cavity, the latter to stiffen the matrix and facilitate handling. Then fill the matrix with porcelain body to match the natural tooth, and fuse. Remove the platinum, make slight retaining-grooves in the body of the filling with diamond disk, these grooves to abut as nearly as possible upon similar ones made in the side walls of the cavity. A mere scratch in the labial cavities will suffice. Then dry the cavity and filling, and insert with a thin mixture of cement, cover with sandarac, and allow to set well before removing the surplus cement. Extreme care should be taken that the marginal lines should be so perfect that subsequent grinding on them will be unnecessary. In filling cervico-labial cavities, pink porcelain body can be used to take the place of gum-tissue lost through recession. In large corners and tips, oftentimes short double-headed pins should be made and used, one head in the filling, the other as anchorage button in the cavity.

The operations next described are those in which porcelain work is most valuable. In these the jacket crown is used. Teeth that have been repeatedly filled with metals and have as often failed, can be restored to their natural appearance and use without disturbing the living pulp. When the natural crown has decayed beyond the metal filling, and the tooth is yet alive, or the crown is undeveloped, or is irregular in form, or twisted in its socket, or

slightly out of position, or worn away by friction or erosion, it can be crowned and regulated without sacrificing the pulp, and with a crown whose facing has the firmest attachments throughout its entire palatal surface, thus making the strongest porcelain-faced crown known. These crowns are so constructed that easy access to the pulp in direct line with the root-canal can be had in case of subsequent trouble. They are commonly used only on the twenty anterior teeth, as gold crowns are usually practicable for the molars. The crown is made as follows: Reduce the natural crown to a size which will admit of a No. 28, American gauge, platinum plate over the entire palatal and approximal surfaces, and a twenty-two gauge porcelain facing. Obliterate the cervical ridge, then fit the cervical circumference of the stub with a thirty-gauge platinum cylindrical tube (in making which, lap the metal ends a little); solder this with pure gold, using as little as possible, place the tube on the stub, mark it on a line with the palatal surfaces of the approximating teeth and gums, and grind the tube inside the lines with a dry stone, to such thinness that it can be burnished to the stub without affecting the cervical adaptation. Then solder to this surface, with pure gold (using as little as possible), a twenty-eight American gauge platinum plate, *this* to form the entire palatal and about half the approximal surfaces of the crown. Then mark and grind the labial surface of the tube and adapt to the stub by pressure, without burnishing. Use for this an old serrated amalgam plugger, that the ground surface may remain rough for the adhesion of the porcelain, then grind the back of the veneer facing so that, when placed on the shell, it will be in the position required when finished. Remove the shell from the stub, heat it to white heat, to cleanse and prevent carbonation, which might discolor the facing, and place the facing in the shell in correct position, with the porcelain body between, and dry well before baking. Bake to a slight gloss only on the porcelain body, cool slowly, and finish the same as in Richmond crown-work.

In attaching a bridge tooth to a jacket crown, allow the heavy palatal backing to extend across the space to be filled, roughen its labial surface with a dry stone, curl the edges slightly to stiffen them, and proceed with a facing as in the jacket crown.

For longer bridges the jacket minus the porcelain can be made,

but with pins attached to the labial surface, the bridge teeth soldered to them as in ordinary bridge-work. The facings can be put on the shells by the method explained, in the attaching of a cup facing. For replacing a lost facing from a bridge which is broken, burnish a thirty-two-gauge platinum plate to the bridge backing, with holes to allow pins to go through the plate, solder to this with pure gold (using as little gold as possible) two tubes of platinum made to fit closely over the pins. Attach to this the old facing or a duplicate, in the same manner as in attaching the facing to the jacket crown. Cement this on, and you have a permanent repair without the trouble of taking off the bridge.

To those aggressives who, with impunity, knock out the pulp and never lose from subsequent trouble more than the old original two per cent., this jacket crowning will seem superfluous; but to those meek and lowlys who advocate the preservation of the pulp whenever possible, and wish to be free from the two per cent. mortality, and at the same time wish to feel the satisfaction of doing better work, this method of crowning will commend itself.

Some other practical uses for porcelain work may be found in fusing pins or porcelain buttons on blocks, repairing cracked blocks, contouring teeth and portions of gum sections, making two blocks continuous, coloring teeth with mineral stains or bodies to match anomalous shades, painting gold fillings on artificial crowns, etc. In post crowns, perfect adaptation to the root with porcelain can be had by fastening the screw-post in the root first, and proceeding as in the attachments of a cup facing, making the entire crown, with the exception of the veneer facing, of the porcelain body.

British Journal of Dental Science for February, 1896.

"ORAL SURGERY," by Edmund W. Roughton, B. S., M. D. (Lond.), F. R. C. S. Eng. *Treatment of Tumors of the Maxilla.* Innocent tumors, such as fibromata, enchondromata, and osteomata may, when small, be removed *from* the maxilla; when growing from the surface they may be cut off together with the piece of bone to which they are actually attached, or when growing from the antrum they may enucleated after opening that cavity freely. Large innocent tumors require removal *with* the whole or

a large portion of the maxilla. Malignant tumors nearly always necessitate removal of the entire maxilla, although occasionally the disease is sufficiently limited to enable the surgeon to spare the malar bone or the orbital plate. Thorough and complete removal of the tumor is necessary; no partial or piecemeal operation is permissible. Before attempting removal of the maxilla the surgeon should satisfy himself as far as possible as to the diagnostic points mentioned already. He must also determine whether the growth he has to deal with is one that can be removed with a fair prospect of success. No definite rules can be formulated, each case requiring separate consideration on its own merits. When the tumor is of many months duration, hard, well-defined, limited to the maxilla, and the skin over it freely movable, even though thinned from pressure or altered in color, it may be regarded as one favorable for removal. If, on the other hand, the growth of the tumor has been rapid, its consistency soft and ill-defined, its vascularity great, the skin over it involved and fixed, the orbit, nose, naso-pharynx or temporal region invaded, the submaxillary and cervical glands enlarged, the patient old, weak, or emaciated, the case must be considered unsuited for operative interference.

Complete Extirpation of the Maxilla.—Before the operation the face must be shaved and the mouth rendered as aseptic as possible. If time permits, carious teeth should be attended to and those covered with tartar carefully scaled; the mouth should be frequently rinsed with an antiseptic mouth wash and mopped out with a 1-in-4000 solution of biniodide of mercury immediately before the operation. If the patient is old or feeble it is advisable to administer an enema of hot brandy and water. The administration of chloroform (the only suitable anæsthetic for the operation) must be entrusted to an assistant who is thoroughly reliable and accustomed to operations involving the mouth. When the patient is under the influence of the anæsthetic the surgeon makes a complete examination of the growth to ascertain its extent and attachment and to decide whether, owing to its vascularity, it is desirable to perform a preliminary laryngotomy and plug the pharynx. An incision is then made through the center of the upper lip, round the ala and along the side of the nose as far as the inner canthus of the eye, and then out-

wards as far as the malar prominence. This incision has the advantage of dividing the branches of the facial nerve and artery near their terminations, and of leaving a much less conspicuous scar than other incisions which have been recommended. The plat thus marked out is rapidly deflected and the hemorrhage, which is often very free, arrested with pressure forceps. The ala of the nose is then detached from the long margin and the periosteum raised from the floor of the orbit. With a saw a deep groove is cut in front of the attachment of the masseter muscle, partially severing the maxilla from the malar bone; the saw-cut should come opposite the spheno-maxillary fissure. The nasal process of the maxilla is then partially divided in the same way. The central incisor on the diseased side is next extracted and a narrow-bladed saw inserted into the nostril; the hard palate is sawn nearly through, care being taken not to damage the soft palate. The mouth is then opened widely with a gag and the soft palate detached from the margin of the hard with a scalpel, so that when the maxilla is removed the soft palate remains behind. The maxilla is now completely severed from its long attachments by means of strong-cutting bone forceps introduced into the saw cuts previously made. The loosened bone is next seized with powerful lion forceps and twisted from side to side, whilst its remaining attachments to soft parts are torn through with the finger or severed with a knife. The bleeding at this stage is seldom serious, as the branches of the internal maxillary artery are small where they enter the maxilla and have been mostly torn across rather than cleanly cut; it can usually be arrested by sponge pressure, but any vessel which can be seen bleeding should be tied. The spheno-maxillary fossa and the cavity of the nose are then examined and any further portions of growth left behind are removed by knife, scissors, or sharp spoon. If the surgeon has any doubt as to the complete removal of the disease, chloride of zinc paste should be applied to the suspicious places on the end of a strip of lint and covered with a pledget of wool dusted with iodoform to prevent the escape of the drug into the mouth. If the growth has been completely and satisfactorily removed the wound should not be packed, but should be painted over with a solution of iodoform in ether; but if there is any oozing going on after all visible bleeding vessels have been secured, the wound

should be plugged with strips of iodoform gauze. The flap having been brought into position is fixed by a number of interrupted sutures of fishing gut, taking particular care to adjust the red margin of the lip very accurately; hare-lip pins may be used if necessary, but are better dispensed with. The wound is dusted over with iodoform and covered with a gauze dressing.

When the patient has recovered from the anæsthetic he should be well propped up in bed to facilitate the escape of discharges. Any plugs that may have been inserted should be removed within 24 hours, and the parts well syringed with weak Condy's fluid and painted over with solution of iodoform in ether; the patient should rinse his mouth frequently if he is able to do so, especially after taking food, so that everything likely to favor the growth of bacteria may be as far as possible removed. He must be fed at frequent intervals with small quantities of milk and beef-tea administered in a teaspoon if he can swallow, or by the nasal tube if deglutition is difficult or impossible. The administration of stimulants will depend upon the general condition of the patient. When the parts are soundly healed the gap in the roof of the mouth must be filled up with a properly adapted obturator and artificial denture.

Result of the Operation. Speaking generally, the results of excision of the maxilla are not satisfactory; the mortality directly due to the operation is about 30 per cent., and only about one patient in every sixteen operated on for malignant disease makes a permanent recovery. This sad result is chiefly due to the operation being too long deferred, owing either to inaccuracy of diagnosis or to an unwillingness on the part of the patient to submit to surgical treatment. The causes of death after the operation may be thus summarized:—(*a*) Hæmorrhage may prove fatal at the time of operation, either by inducing syncope or by obstructing respiration. Secondary hæmorrhage may occur whilst the sloughs are separating; if slight in amount it may be arrested by sucking ice, or by plugging the wound with strips of antiseptic gauze; should these measures fail the wound must be opened up and the bleeding vessel secured *in situ*; as a last resort it may be necessary to tie the external carotid artery. (*b*) The shock of the operation is always severe, in some cases fatal. Prolonged and severe shock should be treated by the application of warmth, and the administration of brandy per rectum and ether

subcutaneously. (*c*) Cellulitis and erysipelas are apt to occur when the patient is old or broken down in health from visceral disease, chronic alcoholism, etc. These conditions demand the local use of antiseptics, scarification or incision of the swollen tissues, and a liberal supply of stimulants. (*d*) Meningitis may result from extension of septic inflammation through the foramina at the base of the skull; practically nothing can be done to ward off the fatal result. (*e*) Septic broncho-pneumonia is one of the most frequent causes of death; it is due to inhalation of septic matter from the mouth. The importance of rendering the mouth aseptic prior to the operation, and of keeping it so afterwards, has already been insisted on. (*f*) In many cases recurrence of the disease takes place even before the wound has healed, and as already stated the number of cases which permanently remain free from recurrence is very small.

Partial Excision of the Maxilla. In some cases of innocent tumor of the maxilla it is possible to remove the whole disease without sacrificing the entire maxilla. In some cases the orbital plate may be preserved. In such the skin incision may be limited to the upper lip and the side of the nose, and the bone may may be divided below the margin of the orbit by saw or chisel. The preservation of the orbital plate is a great advantage to the patient, since when it is removed there is serious disfigurement of the face, much œdema of the lower eyelid, and the eye itself may lapse into an unhealthy condition, and eventually be destroyed. When the orbital and nasal portions of the maxilla are involved, and the palate sound, the latter may be preserved. The malar and nasal processes having been sawn through, a horizontal saw-cut is made above the alveolar process from the nose outwards towards the malar incision, and the piece of bone thus isolated prized out with a chisel or elevator, or wrenched away with lion forceps.

The Dental Practitioner and Advertiser for January, 1896.

"DIAGNOSIS OF PYORRHŒA ALVEOLARIS," by F. L. Sibley, D. D. S., Rochester; read before the Union Convention of the 6th, 7th, and 8th District Dental Societies of N. Y. State, at Binghamton, Oct., 1895. The term phorrhœa alveolaris is like the fabled "cloak of religion"—it covers a multitude of sins. Any disease whereby pus exudes from the sockets of the teeth may be ealled phorrhœa alveolaris.

I recognize two different systemic conditions in pyorrhœa, and term them, for my own convenience, salivary and lithæmic pyorrhœa. One seems as fatal to the teeth as the other. Salivary pyorrhœa is, as the name indicates, due to the deposition of salivary calculus on the necks of the teeth. Usually the first to suffer are the lower incisors, they being in the direct path of the saliva, as it is poured into the mouth. Whether this is a constitutional condition, or the calculus is precipitated by some condition of the fluids of the oral cavity, I am not, at this time, prepared to state. However, the recession of the gums, the absorption of the process, and final loss of the teeth is the result. The calculus is alkaline, and hence can have no connection with the uric acid diathesis.

Lithæmic pyorrhœa is produced where the deposition of serumal calculus is on the roots of the teeth, below the free margin of the gums. The term serumal indicates it as coming from the blood. I believe it to be principally composed of uric acid and oxalate of lime. In this condition the molars are usually the first to suffer, the others being lost in succession. The calculus, as I have stated before, is deposited under the free margin of the gums, near the apices of the roots, its presence causing the absorption of the process, and suppuration of the soft tissues, with loss of the teeth. In a large percentage of these cases you will find that it is hereditary, and I have often noticed it is from the paternal side of the family. In diagnosis, the urine is the factor in determining the lithæmic condition. The urine, when passed, is clear, but upon cooling to the temperature of fifty or sixty degress Fahrenheit, it becomes cloudy, and in some instances throws down a pinkish deposit, which consists of free urates. On heating or being treated with alkalis, it clears up. This may occur in a perfectly healthy subject, after a heavy dinner at night, with wines, etc., but can only be regarded as a symptom, when persistent without errors of diet. You will find some persons affected at the age of thirty, others at forty, still others at sixty. Of course the earlier the time at which it appears, the stronger you will infer the hereditary disposition to be, and the more obstinate, probably, will be its tendency to persist. The resulting condition in the oral cavity is pyorrhœa, due to the gouty diathesis.

I have described two different conditions that are termed

pyorrhœa, but the generally accepted constitutional treatment applies only to one, and that the lithæmic pyorrhœa. As the majority of the cases presenting themselves to us are salivary and alkaline in character, if we prescribe the generally accepted constitutional treatment of pyorrhœa, the result is obvious. We have simply added fuel to the fire.

Zahnarztliche Rundschau for January, 1896.

"PREPARING ROOTS FOR CROWN AND BRIDGE WORK," By Dr. C. Kline, Schwerin, Germany. Translated by Dr. B. J. Cigrand. Up to the present time it was the method to cleanse the root-canal as much as possible and subsequently disinfect the same. How possible, and how often has it happened through drilling, that small particles of the debris or decay have been forced through the apical foramen, and what is the result? Hyperaemia, periostitis, and finally, extraction.

Dr. Evans gives the following, relative to preparing the roots prior to crowning: "1st, cleanse the canal; 2d, sterilize the same." But I contend, as does Dr. Hamecher, that roots have received proper antiseptic preparation only when the contents of the canal have first been sterilized and subsequently removed. Dr. Schrier had the same view of the matter and introduced—on account of the tediousness of the old methods of antisepticising—his kalium-natrium. By the employment of this remedy there results a saponacity of the contents of the canal and perfect sterilization is attained, although this method is accompanied with too many unpleasant features, which under certain circumstances might lead to danger.

Dr. Hamecher has introduced a remedy which attains the same results, namely, saponacity of the contents of the canal, without entailing the disagreeable accompaniments of kalium-natrium. His drug or medicine is kalium-hydricum. To ascertain the workings of kalium-hydricum to a certainty I have, in my position as assistant at the Dresden Institute of Dentistry, numerous opportunities and can positively assert that, in my opinion, there can be no safer remedy for sterilizing root-canals than kalium-hydricum. Only through the employment of this remedy have we reached excellent results. Roots which had for ten years remained in the maxilla, fully imbedded in the gums, were, after

three days treatment, mounted by crowns which gave perfect sasisfaction and good service; others which had appending to them chronic ulcers received crowns after eight days treatment. In short, so long as the root was of sufficient length and soundness, and solid in the jaw, good results were obtained by the use of the kalium-hydricum, and the roots thus crowned were serviceable. Many in the profession will with reluctance believe what I here assert, and will be inclined to treat my remarks distrustfully; but those who wish to learn more of the remedy can procure literature on the subject by communicating with Dr. Hamecher, who will gladly provide them with further information.

SUGAR AND THE TEETH.—Dr. Vaughan Harley read a paper at the British Medical Association, in the Physiology Section, upon "Sugar as a Food." In addition to praising its virtues, the author combats some of the vices ascribed to sugar. He says that the popular view as to sugar ruining the teeth is not borne out by observation, and that people accustomed to take large quantities are not more liable to bad teeth, but, on the contrary, have in many cases exceptionally fine ones. He quotes the case of the negroes of the West Indies, who are in the habit of taking large quantities of sugar.—*Brit. Jour. Dent. Sc.*

STRANGE CASE OF DEGENERATING HUMAN BODY.—A medical case of the greatest interest was presented to a clinic at the New York College of Dentistry last week, when Dr. F. D. Weise, one of the medical staff, introduced John M. Molanski, who is suffering from what is known in medical science as acromygatia. It is regarded as one of the rarest and most mysterious diseases to which human kind is subject.

Medical authorities differ as to the exact nature of the disease, some believing that it is not really a disease, but a form of physical atavism, or a tendency to return to the original species, or a reversion to the primary type of man.

Molanski is undergoing a bodily metamorphosis. His face is gradually being transformed from its natural appearance into a strong animal type, with protruding under jaw and overhanging brows, which a heavy beard and head of hair but partially conceal. His hands and feet are growing larger and larger, and are already taking on the appearance of those of a monkey. He suffers no personal inconvenience, and is daily engaged in his business of cracker manufacturer, at No. 23 Cherry street. His disease, if it may be so called, is not contagious, being only a state of retrogression. It is not more than nine years ago that acromygalia first made its appearance and was recognized. There are only twenty cases on record, and that of Molanski is the only one now known to be in existence.—*N. Y. Herald.*

by which interest in the profession can be aroused and vigorous treatment of the subject brought before the profession at large through our national, state and local dental societies, as well as through the dental journals. It seems to us that the American Dental Association should take the initiative in this work, formulate methods of treatment for this condition, and then communicate with the various local societies throughout the country.

Finally, the profession might just as well understand that this matter is going to be agitated and emphasized until something shall have been accomplished, looking to the universal treatment of this question, commensurate with its importance.

Yours truly,

J. AUSTIN DUNN.

NEW YORK LETTER.

NEW YORK, March 21, 1896.

To the Editor of the Digest,

DEAR DOCTOR:—March—yes New York is marching on. Somewhat stormy, according to the New York *Tribune*.

Some colleges have claimed that they were the only ones that taught the American system, yet right in the face of this Mr. Tomes, of London, has testified in the courts that "there is no system that is not common to all dentists."

Dr. M. Smith gave an article to the First District Society this month on, "How we can Improve our Local Societies," and so much interest was taken in it, and so much said, that it is useless to discuss it, but they voted to print it for distribution and much is anticipated from it.

The clinics of the Odontological, held from four to six P. M. the first Tuesday in each month, at the Society rooms, being of a "high order," are already a pronounced success. A generous contribution of chairs, instruments and materials, is forthcoming from the members and dealers. This Society has gotten on a foundation that will insure for it a decided success and precedence. Its cabinet is fast becoming an object of great attraction, and it will increase rather than diminish. There is no reason why it cannot become the headquarters of dental interest in our city. At the last meeting the Society voted to call their clinics "The Dwinelle Clinics."

Letters.

THE FEELING IN NEBRASKA.

OMAHA, Jan. 15, 1896.

Dr. J. N. Crouse, Chicago,

DEAR DOCTOR:—At the last meeting of the Omaha Odontological Society I was instructed to write you of the following action which was taken by us:

Resolved, That the secretary of this society be instructed to express to Dr. Crouse our appreciation of his services to the dental profession in his untiring efforts as the head of the Dental Protective Association, and that as a society we are fully in sympathy with him in this noble work, and that we pledge him our support as suggested by him in a circular note addressed to the members of the Protective Ass'n.

The above resolution was unanimously adopted by the society.

Yours truly,

W. N. DORWARD, Sec'y.

SALIVARY CALCULUS AND ITS TREATMENT.

CHICAGO, March 20, 1896.

To the Editor of the Digest,

DEAR DOCTOR:—In the December number of the DIGEST we had a very interesting article from Dr. Geo. H. Cushing, under the head of "A Blot on the Profession." The subject of Salivary Calculus and its treatment with relation to diseases in the mouth has not received the attention for the last forty years its importance deserves. In that time we have had once in a great while a paper similar to Dr. Cushing's on the subject from men as thoroughly qualified to speak authoritatively on it. Experience and observation seem to prove that as many teeth are lost from calcareous deposits on the teeth as from decay, and yet, strange as it may seem, the matter has received scant attention. Notwithstanding we profess to be a progressive profession, when we come to consider the importance of this question are we not inconsistent? The object of this brief letter is to suggest some ways or means

The Dental Digest.

PUBLISHED THE

TWENTIETH DAY OF EVERY MONTH.

Editorial.

GREAT VICTORY—THE LOW BRIDGE SUIT WON BY THE DENTAL PROTECTIVE ASSOCIATION.

Never since the day when the Goodyear Dental Vulcanite patent expired have dentists had such cause for congratulation and rejoicing. We have had the privilege of reporting from time to time through letters, circulars, and journal articles, a succession of victories for the Dental Protective Association in all suits undertaken in the United States Supreme court, and all the lower courts in various parts of the country, and every suit has been won. But no suit undertaken has ranked in importance with the one just decided. Consequently, active preparations for the defense of this suit have been in progress for eight years; a vast amount of correspondence has been conducted; weeks of time each year have been consumed in the taking of testimony; and not a day has been free from care and anxiety concerning it on the part of those in charge. Nothing has been left undone which could possibly be of advantage in the trial. Hence the relief and satisfaction that a decision has been reached and that right has triumphed.

All honor to the able attorneys who have worked so indefatigably in our behalf, and to the members of the Protective Association who have given their sympathy, co-operation and aid, even when it seemed as if victory must surely perch on the banners of our opponents.

The one obstacle which has given us the greatest amount of trouble during all the protection of the members was, that the Crown Co. had obtained a decision which declared the Low Bridge patent valid, before the organization of the Protective Association

Dr. Gaylord, of Conn., and Dr. Hull, of Mass., gave a demonstration of the acid treatment outlined by Dr. Hull in the February DIGEST, which was of more than ordinary interest. Two cases of surgery that had been operated on for necrosis were exhibited by Dr. Cady. The fine new chair and full equipment of all electrical attachments, and the solid oak cabinet, emphasize the thought that the clinic is an established fact for the future. Dr. Rhein's paper classifying the phases of Pyorrhea was, in our opinion, the best that has been given, and we may say the first time it has been done. The paper will be decidedly instructive; his record of cases under the classified head proves this.

The changing of the published proceedings of the Society is far from being acceptable to some of the members.

Nothing has so stirred the dental profession in a long time as Dr. Williams' London letter in the March *Cosmos*. The next move by Messrs. Heitzman, Abbott and Boedecker, which is naturally expected from them, has put all on the *qui vive*. Dr. Williams expresses great satisfaction that has come of waiting even ten years for his claimed vindication. "Enamel has no organized material," hence, "no structure." Will the Damascus blades be whetted and brought out?

Cordially, NEW YORK.

BALSAMO DEL DESERTO.—In case it should become too stiff to work easily, soften it by heat over a water-bath, add from 5 to 10 drops of oil of cinnamon, and mix thoroughly.—*W. H. White.*

CAMPHOR FOR ETHER COLLAPSE.—Schilling affirms that hypodermic injections of camphor in larger doses than the text-books advise are beneficial in ether collapse. Half-grain doses are very effective, but the results obtained from one-grain doses are extremely gratifying. The solution should be one part camphor to ten parts olive oil. As the camphor is eliminated within two hours it has no cumulative effect.—*Munch. med. Woch.*

THE SIZE OF A CHEMICAL ATOM.—Recent calculations of Sir William Thompson go to show that the average size of a chemical atom is not less than six and not greater than sixty billionths of a cubic inch, and that in a cubic inch of air there are 300 quintillions of atoms. Hence the cubic inch of air is by no means full, and it is possible for them to move 18 miles a minute and collide against each other, as it is estimated they actually do, 8,500,000 times a second.—*Jour. of Brit. Dent. Ass'n.*

This enabled them to force licensees to agree to recognize the validity of all of their patents—some forty or fifty in number—on which no decision had ever been rendered, and helped them in other ways to intimidate and secure royalty from many members of the profession. In fact, their having obtained the decision favorable to the Low Bridge patent has been their main bulwark of strength. And this company positively refused to have another trial to test the validity of their patent in any federal circuit except the one in which their patent had been declared valid. Hence we were handicapped from the outset, and hence the greater the victory. We met them on their own ground and won, the suit being dismissed by U. S. Judge Hoyt H. Wheeler, of Vermont, before whom the case was argued at New York City, January 14th to 17th last. Members of the Dental Protective Association—and those who should be members—it is time for hand-shaking and congratulations.

DOES THE DECISION ON THE LOW BRIDGE PATENT END THE LITIGATION OF THE DENTAL PROTECTIVE ASSOCIATION AS TO THIS PATENT?

In answer to this question we answer most emphatically, No! Already the Crown Co. are preparing for appeal to the Federal Court of Appeals. But it makes all the difference in the world which is the under dog in the fight.

Having obtained a reversal of the former decision we now meet them in the appeal on an even footing. If the former decision had been sustained we would have been obliged to make the appeal, and to have borne the accompanying extra expense which they now have to bear, and to have urged our case with two decisions sustaining the claims of our opponents against us.

Never was the motto of our journal so significant—"Freedom and Progress Come from Union of Action." Without the Dental Protective Association, which is made up of the best men in the profession, we should to-day be helpless in the hands of a great monopoly, and the prey of a horde of patent claimants who have been held so completely at bay that the rank and file of the profession are not even aware of their existence and illegal designs.

We have already described somewhat in detail the numerous patent claimants, besides the International Tooth Crown Co., that would be extorting royalty in large amounts from members of the profession, except for the barrier the Protective Association is against them, and therefore will not go farther into details at this time. Suffice it to say, that the Crown Co. are not out of the way by any means, but are preparing to appeal this suit which we have just won, and to break up the Protective Association if they possibly can. There are many other patent claimants who are just waiting for the Association to go to pieces before they saddle their claims upon the profession. Therefore, it certainly behooves the membership to get those outside the Association into it. New members are coming in all the time, but every reputable dentist in the country should belong. Will you do your share to accomplish that result?

Notices.

A DAY'S CLINIC IN OMAHA.

The Omaha Odontological Society and the Dental Department of the University of Omaha will give a day's clinic on April 2, 1896, to be followed by the Commencement Exercises and Banquet in the evening. Operations will be performed by the leading operators of Omaha and surrounding cities.

GEORGE NASON,
W. N. DORWARD, Sec'y.
J. H. IRVINE, Treas.
Committee.

ILLINOIS STATE DENTAL SOCIETY.

The thirty-second annual meeting of this society will be held in the Senate Chamber, Springfield, Ill., May 12—15, 1896. The executive committee has been especially fortunate in preparing a very interesting program. No member can afford to be absent. Dentists practicing in the state are cordially invited to attend and to become members of the society if possible. The profession outside of the state is always welcome at these meetings. The hotels and railroads have granted the usual reduction. Pay full fare in coming and take receipt therefor, this, when countersigned by the secretary, entitles the holder to return at one-third the usual fare.

LOUIS OTTOFY, Secretary,
Masonic Temple, Chicago.

PHILADELPHIA DENTAL COLLEGE COMMENCEMENT.

The thirty-third annual commencement of the Philadelphia Dental College was held in the Academy of Music, Philadelphia, March 5, 1896. The order of exercises was as follows: *Introductory Selections;* Prayer, Rev. James Crawford, D. D.; *Overture;* Conferring Degrees; *Graduation Grand March;* Address to Graduates, Prof. S. B. Howell; *Music;* Valedictory, Dr. Chas. N. White; *Music;* Benediction; *Finale.* There were 112 graduates.

HARVARD ODONTOLOGICAL SOCIETY.

At the annual meeting of this society, held Feb. 29, 1896, the following officers were elected: Pres., Waldo E. Boardman, D. M. D.; Rec. Sec'y., Jas. T. Paul, D. M. D.; Cor. Sec'y., Edward B. Hitchcock, D. M. D.; Treas., Dwight M. Clapp, D. M. D.; Editor, Henry L. Upham, D. M. D.; Executive Com., Jos. T. Paul, D. M. D.; Frank T. Taylor, D. M. D.; Wm. P. Cooke, D. M. D. Com. on Clinics, J. G. W. Werner, D. M. D.; Wm. P. Cooke, D. M. D.; Arthur H. Stoddard, D. M. D.

NORTHERN IOWA DENTAL SOCIETY.

This society was organized at Clear Lake, Iowa, Sept. 3, 1895, with Dr. Wm. H. Steele, Pres., Dr. J. J. Grout, Vice Pres.; and a three days meeting was held. The next meeting will be at Spirit Lake, Iowa, Sept. 1–3, 1896, and the profession are cordially invited to attend. The present officers are: Dr. E. D. Brower, Pres.; Dr. J. J. Grout, Vice-Pres.; Dr. A. N. Ferris, Treas.; Dr. Geo. H. Belding, Sec'y. Executive Com., Dr. W. T. Knapp, Dr. C. J. Peterson, Dr. F. J. Gallagher.

TENNESSEE DENTAL ASSOCIATION.

The following are the officers of this association: Pres., Dr. D. B. Brabson. Knoxville; Sec'y., Dr. P. D. Houston, Lewisburg; Executive Com., Drs. J. Y. Crawford, D. R. Stubblefield, and J. A. Dale, all of Nashville. The next meeting will begin on May 5, 1896, at Nashville. Dentists from all parts of the country are invited to attend.

News Summary.

Dr. C. R. Taylor, of Streator, Ill., was in Chicago about two weeks ago.

ANOTHER BACILLUS IN THE MOUTH.—M. Gembert has read a paper at a meeting of the Therapeutical Society in Paris, in which he stated that the Bacillus Coli has been found in the mouth of healthy persons. In sixty such cases the organism was found in twenty-seven. Thirty-six experiments were made to ascertain the chief locality in which the bacilli may be found, and in more than half the tonsil appeared to be the seat.—*Brit. Jour. Dent. Sc.*

FOR SALE.—Dental office, located for eleven years on the busiest corner of the West side. Will sell cheap. For particulars call or address, Dentist, 306 New Era Building, Harrison St. & Blue Island Ave., Chicago.

FOR SALE.—Second hand *Gas Outfit.* "Long" pattern, with full cylinder of 100 gals. gas, silk-covered tubing, and double-valve inflatable rim mouthpiece. The outfit is nicely japanned and as good as new. Will sell complete for $45.00. Address Dental Protective Supply Co., 1101 Champlain Bldg., Chicago.

A NEW SUBSTANCE.—"Viscose" is a new industrial substance which is being manufactured by a syndicate at Erith. It is a species of fireproof celluloid, which can, it is claimed, be manufactured with almost any degree of resistance, varying from that of ivory, ebony or horn to almost that of indiarubber. The process of manufacture is said to be comparatively inexpensive with that employed for the ordinary celluloid, whilst the raw stock, consisting mainly of waste products, conduces still further to economy of production.—*Invention.*

ARISTOL AND CHLOROFORM.—Aristol dissolved with chloroform, making a paste about the consistency of syrup, is very efficient to stop toothache from an inflamed or exposed pulp, and to seal a cavity under treatment. When applying nitrate of silver to spots where decay has exposed sensitive dentine, it can be covered and kept from contact with the mucous membrane for several hours by this aristol paste applied with a little spunk. When the dam is once on the tooth it can be held there with a very little paste and spunk, and secured even better than with sandarac varnish. Try it and thus avoid the too frequent use of clamps and ligatures. C.

UP TO DATE.—[This is sent us by a reader.] A patient recently told us a good one on her old family dentist in the little town of——. The old man had for a long time conducted an "I-had-fifteen-teeth-drawn-there" sort of office to his own entire satisfaction and profit, but at last trouble came to him in the shape of an educated young graduate, who by good work was getting all the old man's patients, so something had to be done. After much deliberation he hit upon a scheme and caused it to be announced in the local papers that "Dr.— would leave for an extended trip among the various dental schools in the country to thoroughly post himself in the *very latest* of dental science and knowledge." About a week later he edified the natives with a new sign of huge dimensions and having much blue enamel and gold leaf, which bore, in large letters, the legend, "TEETH EXTRACTED WITHOUT PAIN!"

FOUR HUNDRED ($400) DOLLARS IN PRIZES.

The special attention of our readers is called to the advertisement of the Palisade Manufacturing Co., with the above title, on page 20 of this issue.

The prize contest which this well known firm announces will no doubt attract a great deal of attention and result in the submission of many articles of merit on "Germicides and Antiseptics in Dentistry." The prizes are extremely liberal, and the well known professional and literary eminence of Dr. Geo. S.

Allan, of New York, who has kindly consented to act as judge, is a sufficient guarantee of the impartiality to be observed in the awarding of the prizes.

We are assured that there is absolutely "no string" attached to the provisions of this contest, and any dentist in good standing in the community is invited to compete on equal terms with every other competitor.

Further particulars as to conditions, etc., can be obtained by addressing the above named firm.

SIN IS PINK, NOT SCARLET.—Dr. Elmer Gates, formerly with the bureau of ethnology of the Smithsonian Institute, has concluded, after experimenting, that scarlet is not the distinctive color of sin, and that the Bible expression, "though your sins be as scarlet," is simply a rhetorical exaggeration. Dr Gates has found in his study of the brain that each definite emotion produces chemical products in the secretions and excretions which are characteristic of these emotions. For example, the evil emotions produce a poisonous product, while happy emotions produce life-promoting compounds. In other words, every emotional experience creates brain structure, the refunctioning of which reproduces its characteristic good and bad chemical products. For instance, he found the perspiration to contain different volative organic compounds under the influence of different emotions. These products may be detected by chemical analysis in the perspiration of an individual, and Dr. Gates has discovered about forty of the bad and as many of the good. Of the chemical products that of guilt is the worst. If a small quantity of the perspiration of a person suffering from conscious guilt be placed in a glass tube and exposed to contact with selenic acid it will turn pink. No other poison, similarly generated, exhibits the same phenomenon. Therefore, pink is apparently the characteristic color of sin, not scarlet.—*Philadelphia Press.*

NICOTINE.—Nicotine is fatal to a large number of the microbes that cause some of our most serious sicknesses. In our issue of February 23rd, 1889, says *Chambers' Journal*, we noticed the results of investigations on this head by an Italian professor, Dr. Vincenzo Tassinari, and the results of the intended further experiments therein alluded to have recently appeared in the *Italia Termale*. He finds that:

(1) The smoke of Cavour, Virginia, and Tuscan cigars, and all black and chopped tobaccos, possess a very pronounced bactericidal power, especially against the bacillus of Asiatic cholera.

(2) This microbicidal action may in all probability be attributed to the products of nicotine.

(3) In epidemics of cholera and typhus the use of tobacco may be rather useful than hurtful.

(4) Tobacco-smoke merits special consideration on the hygiene of the mouth as a prophylactic means of combating microbian affections of the buccal cavity.

Non-smokers have hitherto fumed, and declared
That the succus of "baccy" will kill us;
But what say they now Tassinari has proved
That the sucking it slays the bacillus?

MICRO-ORGANISMS IN THE HEALTHY NOSE.—Among the interesting facts we owe to bacteriology is the discovery that so-called healthy persons are the lodging places of myriads of bacteria, powdering their skins, dwelling in the cavities and orifices of the body, mouth, nose, throat, intestines, etc. It is calculated that 500 litres of air, bearing on a low average 1,500 bacteria, are inspired every hour. These microbes of the healthy nose have been investigated by Hajek, Lowenberg, Frankel, von Besser, Paulsen, St. Clair, Thomson and Hewlett, among others. The latter authors arrive at the following conclusions: 1, the vestibule is lined with skin furnished with hairs and with sudoriferous and sebaceous glands, and is not part of the nose cavity proper—only leading to it; hence in bacteriologic examinations of the nasal fossæ a distinction must be made between the vestibule and the mucous cavity proper; 2, contamination from the lining of the vestibule is difficult to avoid, even when this source of error is realized; 3, in the dust and crusts of mucus among the vibrissæ of healthy subjects micro-organisms are never absent—as a rule they are abundant; 4, on the Schneiderian membrane the reverse is the case, since in over 80 per cent. of the cases no organisms whatever were found and the mucus was completely sterile; 5, the occurrence of pathogenic organisms on the Schneiderian membrane is quite exceptional. While the number of individual cases in these researches is hardly large enough to be conclusive, still, if they are corroborated, it would seem that all microbes of inspired air are arrested either by the moist surface and the vibrassæ of the vestibule, or that, as has been already claimed by Wurtz and Lermoyez, the nasal mucus is germicidal. —*American Microscopical Journal.*

Obituary.

IN MEMORIAM.

In view of the sudden death of Mr. S. R. Bingham, of this city, we, the members of the Chicago Dental Society, desire in our appreciation of his many excellent qualities to place on our records the following Memorial.

Though not a member of the profession, yet he was so intimately associated with its members in a business capacity, and was so greatly endeared to many of them by long and loving association, that it seems most fitting that this Society should express the sense of its great loss and convey to his family its profound sympathy in their hour of terrible bereavement.

The deceased has been the representative of the S. S. White Dental Manufacturing Co. in this city for nearly forty years, and most members of the profession have met him frequently and almost daily, for a greater or less portion of that period, and some have had the high privilege of his friendship during the entire time of his sojourn here.

It would be hard to find a man of purer mind, of a sweeter, lovlier nature, of greater integrity, of broader sympathies, or of more loyal friendship than he. He was, in a word, an example of the highest type of a true Christian, in the broadest sense of that term.

To those who have known him intimately the sense of personal loss in his going from among us is very keen; while all who have known him at all must feel that an elevating influence has been taken away from our midst.

Very appropriately may be quoted of him what he wrote on the fly-leaf of a copy of his Memorial to Samuel S. White and James W. White, when presenting it to a friend:—"Who knew both these and is the better for it." And no more fitting words could be said concerning him than the closing sentence of the Memorial above referred to:—"He showed us how to live. Let us follow on in a like faithful service of our fellows, our country, and our God, until with him we enter upon a loftier service, in the broader fields, and under the fairer skies, of the Eternal home."

W. A. STEVENS,
C. N. JOHNSON,
GEO. H. CUSHING,
Committee.

RESOLUTIONS ON THE DEATH OF DR. JAMES E. GARRETSON.

WHEREAS, The profession has sustained a great loss in the death of James E. Garretson, M. D., D. D. S., Professor of Oral Surgery in the Philadelphia Dental College. Be it therefore

Resolved, That the Chicago Dental Society hereby expresses its full appreciation of the distinguished services as a member of the medical and dental professions, and as a practitioner, teacher, and author.

Professor Garretson placed the profession under lasting obligations for his invaluable labors in placing Oral Surgery upon a truly scientific basis.

He was, moreover, a man of wide knowledge and attainments in the field of general literature and philosophy, highly esteemed by his colleagues, beloved by his students, and honored by his fellows in the many scientific societies to which he belonged. His loss is well nigh irreparable.

Resolved, That this Society express to the college with which he was so long connected, and especially to his family and personal friends, our heartfelt sympathy in their bereavement.

Resolved, That an engrossed copy of these resolutions be sent to his family and the Faculty of the Philadelphia Dental College, and that they be published in the various dental journals, and also spread upon the minutes of this Society.

GEO. H. CUSHING,
GARRETT NEWKIRK,
TRUMAN W. BROPHY,
A. W. HARLAN,
J. N. CROUSE,
} Committee.